Doctor Pro3

Blood Pressure Data Analysis Software
(Windows)

TM-9501

INSTRUCTION MANUAL

A&D Medical

1WMPD4001540C

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WARNING DEFINITIONS

The warnings described in this manual have the following definitions:

■Warning Definitions

⚠DANGER	An imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	A potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	A potentially hazardous situation which, if not avoided, may result in minor or moderate injury. This warning may also be used as an alert against unsafe practices.

■Symbol Examples

	The symbol △ indicates “Caution”. The contents of the caution are described inside or near the symbol, using text or a picture. The example on the left indicates caution against electrical shock.
	The symbol ⃠ indicates “Do not.” The contents are described inside or near the symbol, using text or a picture. The example on the left indicates “Do not disassemble.”
	The symbol ● indicates “Never fail to.” The contents are described inside or near the symbol, using text or a picture. The example on the left indicates “Never fail to perform what is described”.

■Other

NOTE	Provides information useful for the user to operate the device.

Precautions for each operation are described in the instruction manual. Read the instruction manual before using the device.

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10. Validation Period

10.1. This Contract shall become effective upon the installation of the Software by the User and shall remain effective until the User terminates this contract in accordance with 10.2. or 10.3. below.

10.2. This contract will terminate when the customer disposes of the Software, including backup copies, and deletes all data previously installed from the Software.

10.3. This contract will terminate immediately in the event that the customer disagrees with any of the conditions set forth herein.

10.4. The Customer must immediately dispose of the software in the event that this contract is terminated in accordance with conditions 10.3. above.

10.5. Clauses 3 to 11 shall remain effective beyond the termination of this agreement.

11. Obligations Extending Beyond Termination

Upon the termination of this contract, the User is responsible for destroying the Software and deleting the memory data on the User's Designated Machine to prevent the Software from being used by a third party. In addition, all duplicates and derivative materials relating to the Software must also be destroyed.

PRECAUTIONS FOR USE

In order to use the device safely and correctly, please read the following precautions carefully before using the device. More precautions appear in the main text of the instruction manual. Read the manual thoroughly before using the device. After reading, store the manual in a readily available location for future reference.

1. Storage site

⚠CAUTION	
	Avoid the followings as a storage site. ▪ Areas where the temperature is less than -20°C or greater than +55°C, and the relative humidity is over 95% ▪ Areas where chemicals are stored ▪ Areas where exposed to direct sunlight

2. Maintenance

⚠CAUTION	
	▪ Inspect cables before use and periodically. ▪ When a cable is used after a long period of storage, confirm that the device is functioning correctly and safely. ▪ Clean the cable with a dry, soft cloth. Do not use thinner, alcohol, benzine, or wet dusters.

3. Precautions against strong electromagnetic waves

⚠CAUTION	
	▪ If strong electromagnetic waves are present near a personal computer during communication, errors in data transmission or an unintended operation may occur. Under such conditions, check the electromagnetic status and take necessary measures.

The following are general examples of factors that may interfere with the proper functioning of the device and recommended solutions.

- Cellular phone use

  May cause undesired operation because cell phones emit electromagnetic waves.

  - ☐ In a room or building where the device is used, turn off cellular phones and other small radio units.

- High frequency noise from other devices via an electrical outlet
  - ☐ Detect the source of the noise and take measures to break the route, using a noise suppressor.
  - ☐ Avoid using the noise generating device.
  - ☐ Use another electrical outlet.

- Static electricity
  - ☐ Fully discharge the operator before use.
  - ☐ Humidify the room.

- Lightning strike

  A nearby lightning strike may induce excessive voltage into the device. In the event of a lightning strike:

  - ☐ Use an uninterruptible power supply to operate the device.

- Using the device introduces noise into a television or radio.
  - ☐ Place the affected television or radio away from the device.

PRECAUTIONS FOR SAFETY MEASUREMENTS

Obey the following precautions for safety measurements

1. Blood pressure measurement

⚠CAUTION	
⃠	▪ When the blood pressure monitor is connected to a personal computer, do not place the cuff on a patient.

2. Terms and abbreviations

The tables below list terms and abbreviations used for the blood pressure data analysis software.

Terms and abbreviations related to blood pressure measurements	Description
Korotkoff: Korotkoff measurement method	Blood pressure values are obtained by detecting the Korotkoff sounds.
Oscillometric: Oscillometric method	Blood pressure values are obtained by analyzing variations in pulse pressure detected in the cuff.
Systolic, SYS, SBP: Systolic Blood Pressure	Maximum blood pressure or the blood pressure when the heart is contracting
Diastolic, DIA, DBP: Diastolic Blood Pressure	Minimum blood pressure or the blood pressure when the heart is relaxing
MAP, MA: Mean Arterial Blood Pressure	Mean blood pressure obtained by the following formula: MAP=DIA+(SYS-DIA)/3
PUL: Pulse Rate	Pulse rate
DP: Double Product	Oxygen consumption by the heart muscle obtained by the following formula: DP=SYS×PUL/1000
BP: Blood Pressure	
BPM: Blood Pressure Measurement	

Terms and abbreviations related to statistical calculations	Description
AVE、mean、m	Arithmetic mean value
max	Maximum value
min	Minimum value
SD、S': Standard Deviation	Standard deviation obtained by the following formula: $[\sum_{i=1}^{n}(X_i-\bar{X})^2 / (n-1)]^{1/2}$ to sample (X_1, ...X_n) n: number of samples、$\bar{X}$: arithmetic mean value
SE: Standard Error	Standard error obtained by the following formula: $(SD^2/n)^{1/2}$ to sample (X_1, ...X_n)
CV: Coefficient of Variation	Coefficient of variation obtained by the following formula: CD=SD/mean[%]
Correlation	
Correlation r: Coefficient of Correlation	
Reg.Line: Regression Line	
Histogram	
c.i.: Confidence Interval	Interval surrounded by the confidence limit of 95%.

Terms and abbreviations related to circadian rhythm	Description
Cosinor	Circadian rhythm analysis method introduced by Halberg et al (1967).
MESOR	A circadian rhythm-adjusted mean based on the parameters of a cosine function fitted to the raw data.
AMP: Amplitude	Amplitude of a cosine curve best fitted to the biological rhythm data.
Acrophase	Phase that represents the maximum value of a cosine curve best fitted to the biological rhythm data.
PR: Percent Rhythm	Rhythm compatibility Squared multiple correlation coefficient (R) between the measured value and the cosine curve best fitted to the biological rhythm data.

Other terms and abbreviations	Description
HBI: Hyperbaric Index	High blood pressure index
Hypobaric Index	Low blood pressure index
Hyperbaric Area	Time integral of the blood pressure values exceeding the user-defined limits
Hypobaric Area	Time integral of the blood pressure values not reaching the user-defined limits
HBI-sys	The limits of the systolic blood pressure to HBI
HBI-dia	The limits of the diastolic blood pressure to HBI
F	Full analysis
P	Partial analysis
Approximate Curve	
Fourier Series Expansion	
Order	
meas.: measurement	
AVERAGE Trend	Average trend shows the trend of hourly average values for systolic blood pressure, diastolic blood pressure, mean arterial blood pressure and pulse.

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1. INTRODUCTION

Thank you for purchasing the Blood Pressure Data Analysis Software Doctor Pro3 manufactured by A&D Company, Ltd. This manual provides information on the operation procedures for Doctor Pro3.

Please read this manual carefully before using Doctor Pro3 in order to acquire sufficient information to use the software properly.

Store the manual in a readily available location for future reference.

2. FEATURES

Doctor Pro3 is a Windows-based Blood Pressure Data Analysis Software that sets the blood pressure monitor measurement parameters and saves the collected blood pressure data into a personal computer. Doctor Pro3 analyzes blood pressure data for each patient. Doctor Pro3 is a powerful tool for diagnosing high blood pressure and managing the blood pressure of patients with high blood pressure.

Doctor Pro3 is intended for use with the following blood pressure monitors.

- TM-2430 ME (Medical Electronics) Ambulatory Blood Pressure Monitor
- UA-767PC ME (Medical Electronics) Digital Blood Pressure Monitor with communication function
- UB-511USB HHC (Home Health Care) Wrist Digital Blood Pressure Monitor with communication function

Doctor Pro3 has the following features.

Patient data management	The blood pressure data and patient information are saved in a personal computer database. The data is separated into groups.
Statistical analysis	Statistical data may be viewed and analyzed in full, partial, sleep, and awake sections, by switching between clearly labeled tabs.
Graphical data	Systolic/diastolic blood pressure, mean arterial blood pressure, and pulse data are displayed graphically to quickly determine patterns or data trends. Circadian rhythm and HBI analysis are displayed graphically and numerically.
Data conversion	The Data Convert feature imports or exports the blood pressure and pulse data in a standard (CSV) file format for use with popular spreadsheet programs.
Printed reports	Custom data report formats are easily defined and printed. The “Print all” feature allows the user to select specific analytical results to be printed and prints a summary report of the selected items.

3. SPECIFICATIONS

3-1 Software Package Components

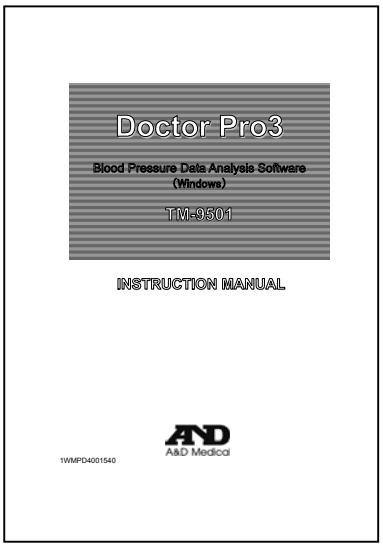
When unpacking the software, it is important to verify that the following articles are included and are in good condition.

If your software package components are damaged or missing, contact the local A&D dealer you purchased the product from.

- CD-ROM 1 disk
- USB cable AX-KO3057-200 (TM-2430 and UA-767PC) 1 piece
- Instruction manual 1 copy (This document)

CD-ROM

USB cable AX-KO3057-200
(for TM-2430 and UA-767PC)



Instruction manual

3-2 Blood Pressure Monitors compatible with Doctor Pro3

Doctor Pro3 is intended for use with the following blood pressure monitors.

TM-2430

- 24-hour ambulatory blood pressure monitoring. Useful for research and treatment of high blood pressure.
- Light weight, approximately 215 g (including batteries).
- Compact size that fits in a palm.
- The monitor is powered by LR6 type (Mignon) alkaline batteries or Ni-Cd rechargeable batteries.

TM-2430

UA-767PC

- Bi-directional communication with a personal computer Penables data analysis and date setting using the Data Analysis Software.
- Stores 280 sets of measurement data.
- Clock and calendar function.
- Alarm can be set up to 6 times a day.
- Useful for monitoring blood pressure treatment, and conducting various clinical trials, research on blood pressure and home-based monitoring systems.

UA-767PC

UB-511USB

- Compact and light weight design.
- Displays 280 sets of memory data and average value.
- Displays the IHB (Irregular Heart Beat).
- Displays the blood pressure and pulse at the same time.
- Fast measurement along with inflation.

UB-511USB

3-3 System Requirements

Computer	Personal computer with a Pentium III 1GHz or greater microprocessor
Memory	Minimum 256MB
Operation system	Windows Vista or Windows XP Professional / Home Edition .NET Framework 1.1 • .NET and MDAC are included on the installation CD.
Graphic adapter	SVGA video card (minimum of 256 colors, 800X600 pixels or higher recommended)
Disk type	CD drive (depends on the media)
Hard disk	Minimum 1GB free space
Interface	USB 2.0 / 1.1
Port	USB A socket
Printer type	Printers supported by the MS Windows™ operating system

⚠CAUTION	
	▪ Only a personal computer that complies with the safety requirements of IEC60950 can be used with this product. If a computer that does not comply with those requirements is used, safety will not be guaranteed.

3-4 Brief Description on Analysis

The TM-2430 Ambulatory Blood Pressure Monitor is used to record an individual's blood pressure over an extended period, normally 24-48 hours. The monitor employs the oscillometric method to record the patient's blood pressure based on predetermined periods and parameters.

The user may divide each 24-hour interval into several periods. Within each period, the monitor may be programmed to record the patient's blood pressure at intervals from OFF to 120 minutes. These measurement intervals may be timed to coincide with the patient's daily activities.

With a UA-767PC or UB-511USB, blood pressure data collected over a long period (maximum 12 months) can be managed and blood pressure trends are indicated clearly by using Doctor Pro3.

Even though the data collected by the old version of Doctor Pro is not directly compatible with the data collected by the current version software, data collected by the old version of Doctor Pro can be converted to the new version using the importing or exporting function.

4. BEFORE USE

4-1 Installing the Software

The software can only be run from a hard disk drive.

To install the software on your hard disk drive, complete the following steps:

1. Insert the CD-ROM into a personal computer CD drive.
2. If the program starts up automatically, go to step 5. Otherwise, click the Start button on the Windows taskbar and select [Run].
3. Type “g:setup”. (g: is the hard disk drive into which the CD-ROM will begin installations.)

   (1) The following appears when the USB driver has not been installed.

   Connect the USB cable supplied with the software to your personal computer and click [Setup FTDI USB Device Driver].

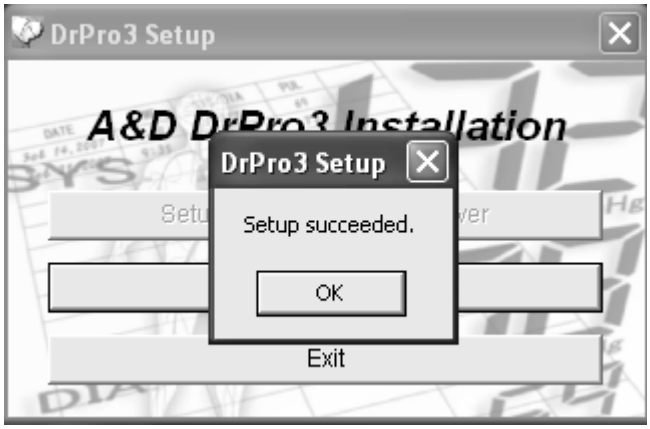
   (2) Specify the CD-ROM Driver folder and install the driver.

   (3) When the driver has been installed successfully, click [Finish].

4. Install Doctor Pro3.

Follow the instructions in the display.

5. When Doctor Pro3 has been installed successfully, the message “Setup succeeded” appears. Click [OK], then click [Exit] to quit the installation mode.



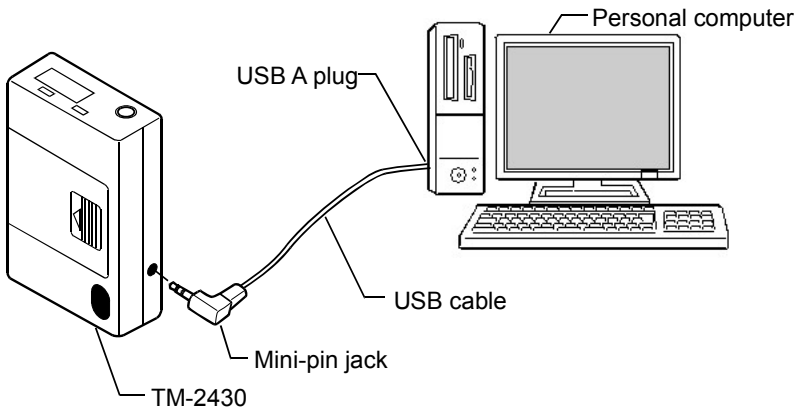
4-2 Connecting the Blood Pressure Monitor to a PC

Connect the blood pressure monitor to your personal computer.

⚠CAUTION	
⃠	▪ When the blood pressure monitor is connected to a personal computer, do not place the cuff on a patient. ▪ Only a personal computer that complies with the safety requirements of IEC60950 can be used with this product. If a computer that does not comply with those requirements is used, safety will not be guaranteed.

4-2-1 Connecting the TM-2430 to the computer

Use the USB cable supplied with the software, otherwise communication errors will occur.



Connection between the TM-2430 and the computer
(The illustration above is not to scale.)

Connect the blood pressure monitor to a personal computer as follows.

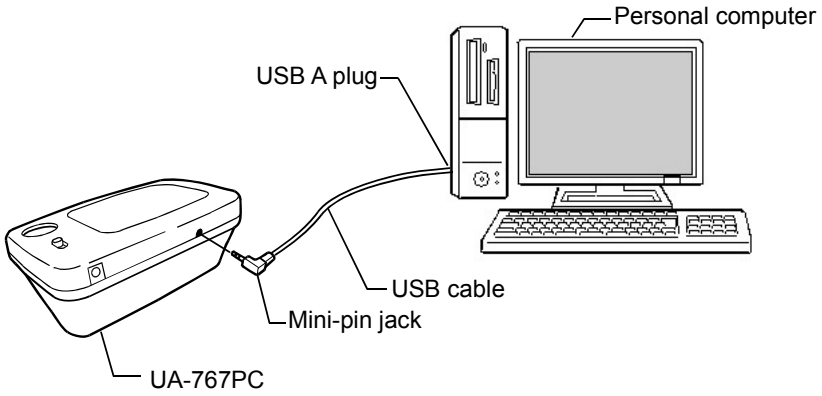
1. Insert the male end (mini-pin jack) of the USB cable into the monitor.
2. Insert the male end (USB A plug) of the USB cable into the computer's USB port.

   ***Note**: Keep the cable connected to the computer unless the port is needed for other functions.*

3. Start up Doctor Pro3.

4-2-2 Connecting the UA-767PC to the computer

Use the USB cable supplied with the software, otherwise communication errors will occur.



Connection between the UA-767PC and the computer
(The illustration above is not to scale.)

Connect the blood pressure monitor to a personal computer as follows.

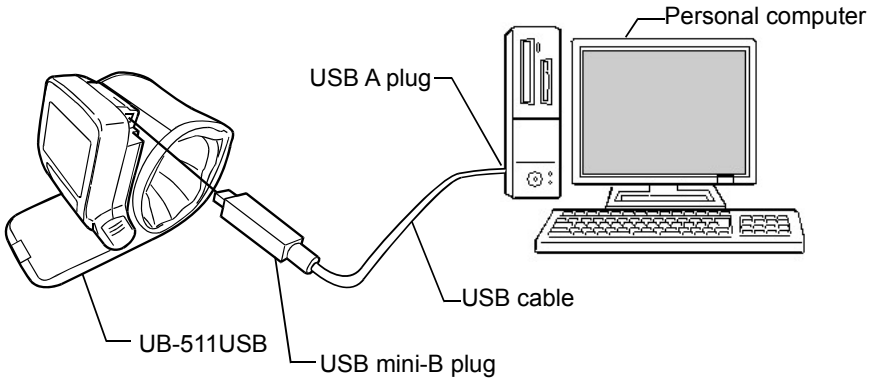
1. Insert the male end (mini-pin jack) of the USB cable into the monitor.
2. Insert the male end (USB A plug) of the USB cable into the computer's USB port.

   Note: *Keep the cable connected to the computer unless the port is needed for other functions.*

3. Start up Doctor Pro3.

4-2-3 Connecting the UB-511USB to the computer

Use the USB mini-B plug – USB A plug USB cable, otherwise communication errors will occur.



Connection between the UB-511USB and the computer
(The illustration above is not to scale.)

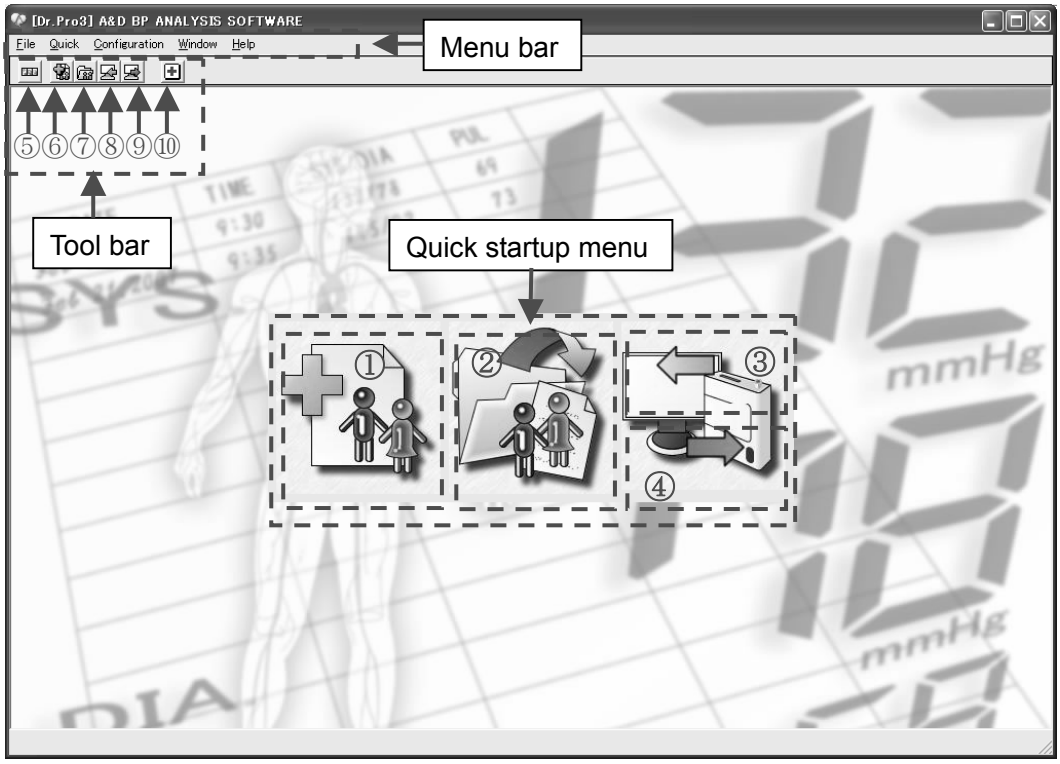
Connect the blood pressure monitor to a personal computer as follows.

1. Insert the male end (USB mini-B plug) of the USB cable into the monitor.
2. Insert the male end (USB A plug) of the USB cable into the computer's USB port.

   Note*: Keep the cable connected to the computer unless the port is needed for other functions.*

3. Start up Doctor Pro3.

5. MAIN WINDOW



Quick startup menu

No.	Name	Description
1	New patient	Opens the New Patient window to register patient information.
2	Open database	Opens the Patients Database window to manage blood pressure data.
3	Receive data	Opens the Receive Data window to receive blood pressure data from the blood pressure monitor.
4	Send setting data	Opens the Send Setting Data window to send the data to the blood pressure monitor.

Menu bar

Name	Description
File	Select from “Import,” “Export,” “Optimize a DB” or “Exit.”
Quick	Same with the quick startup menu.
Configuration	Select from “Medical facility,” “Account mode,” “New account,” “Default settings,” “Measurement pattern settings” or “Change language.”
Window	Select the window displaying method.
Help	Displays the software version information.

Tool bar

No.	Name	Description
5	Quick menu	Turns ON or OFF the quick startup menu.
6	New patient	Same with 1.
7	Open database	Same with 2.
8	Receive data	Same with 3.
9	Send setting data	Same with 4.
10	Medical facility	Opens the Medical Facility window. Similar to the Configuration menu‘s Medical Facility menu.

6. GENERAL OPERATION

6-1 Starting up Doctor Pro3

Startup procedure

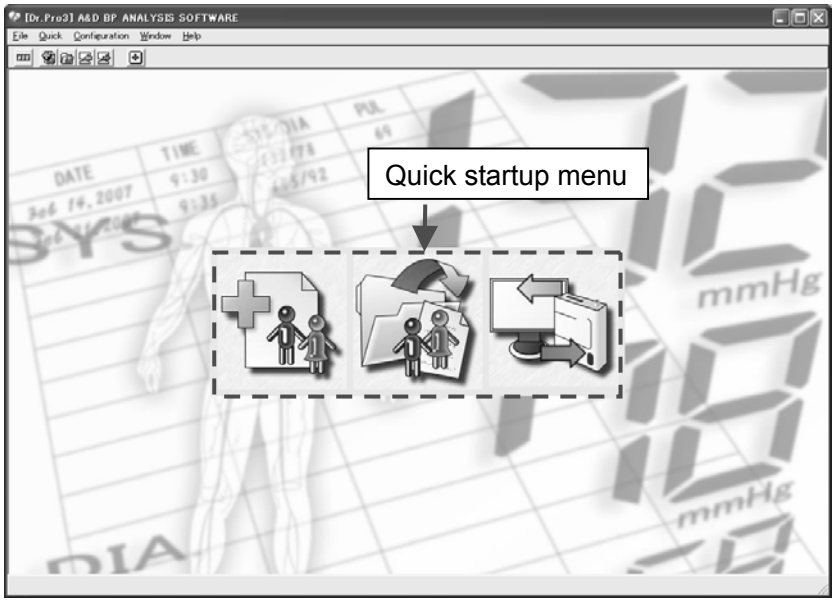
1. To startup Doctor Pro3:

   ・Click “DrPro3” from the START menu.

   or

   ・Click the [DrPro3] icon located on the desk top.

2. The Main window opens.

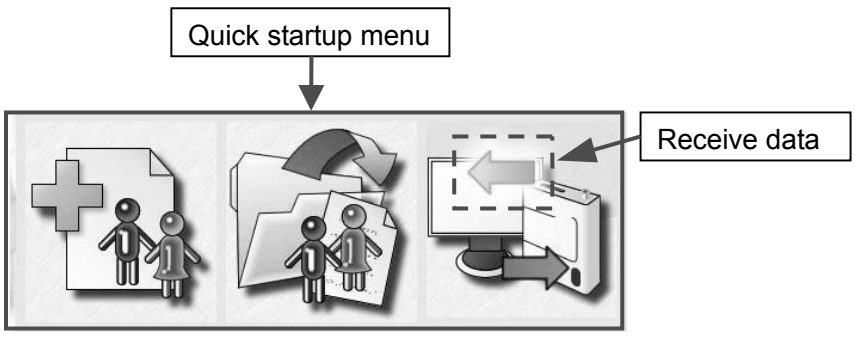


6-2 Receiving the Data

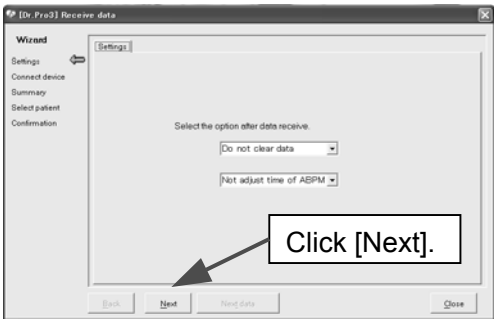
Receives the measurement data from the blood pressure monitor.

For details, refer to Section 9 “RECEIVING DATA.”

1. Click [Receive data] at the quick startup menu.



2. Click [Next].



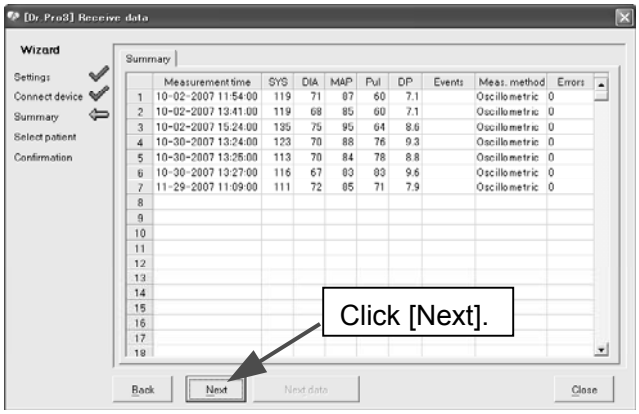
3. When the connection is complete, the message “Successfully received data” appears in the Connect Device window.
   Click [Next].

TM-2430 recognition

UA-767PC recognition

UB-511USB recognition

4. The data received is displayed. Click [Next].



5. The Select Patient window opens.

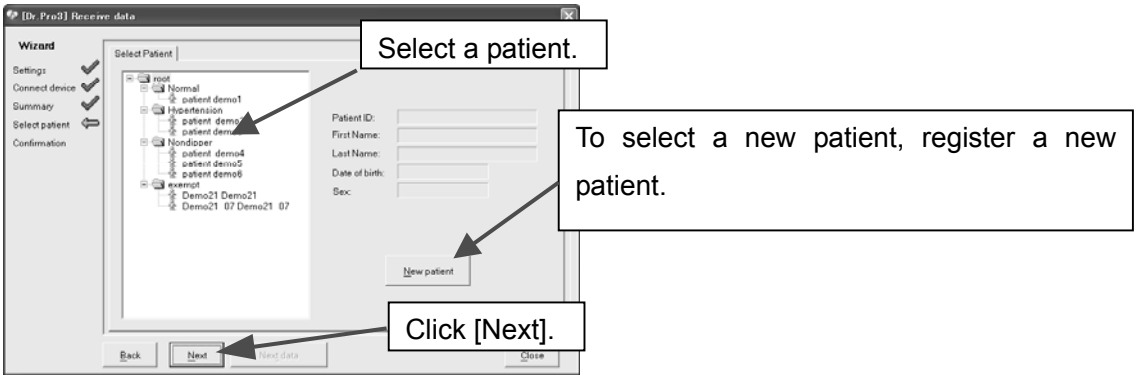
6-3 Selecting or Adding a Patient

Saves the measurement data received. For details, refer to Section 9 “RECEIVING DATA.”

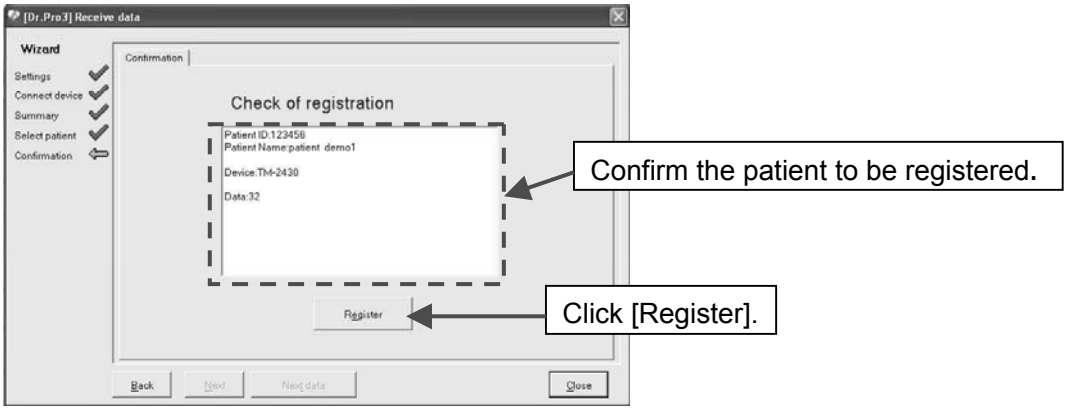
1. Select from the list of registered patients the patient under whose name you would like to save data.

   To select a new patient, click [New patient] to register a new patient.

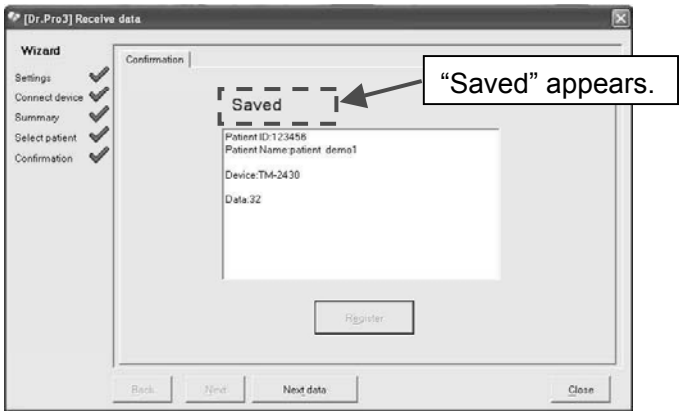
   When the patient selection is completed, click [Next].



2. Confirm the patient to be registered. Click [Register] and then click [OK] in the Confirm window.



3. When the display shown below appears, the patient has been registered.



   To complete the operation, click [Close].

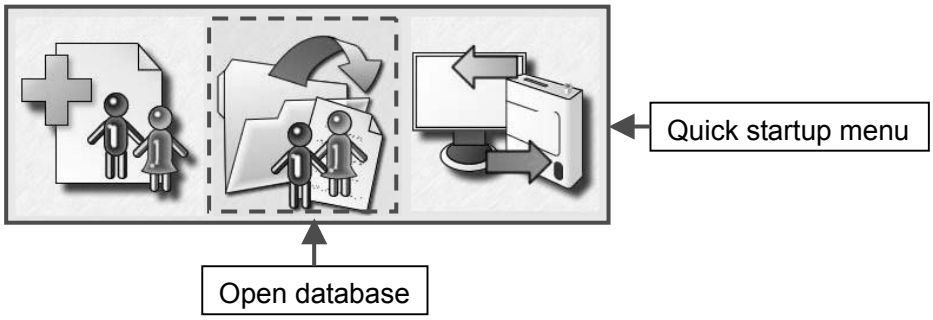
   To continue receiving data, click [Next data].

6-4 Analyzing the Measurement Data

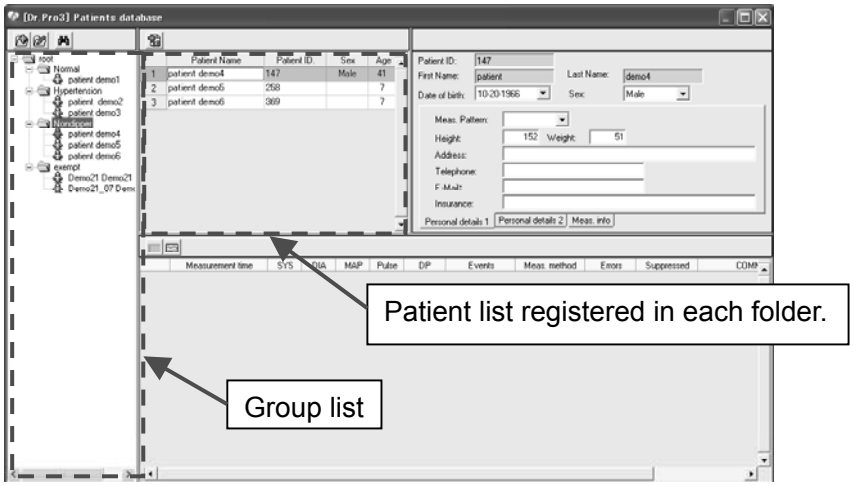
Analyzes the measurement data.

For details, refer to Section 8 “MANAGING DATA.”

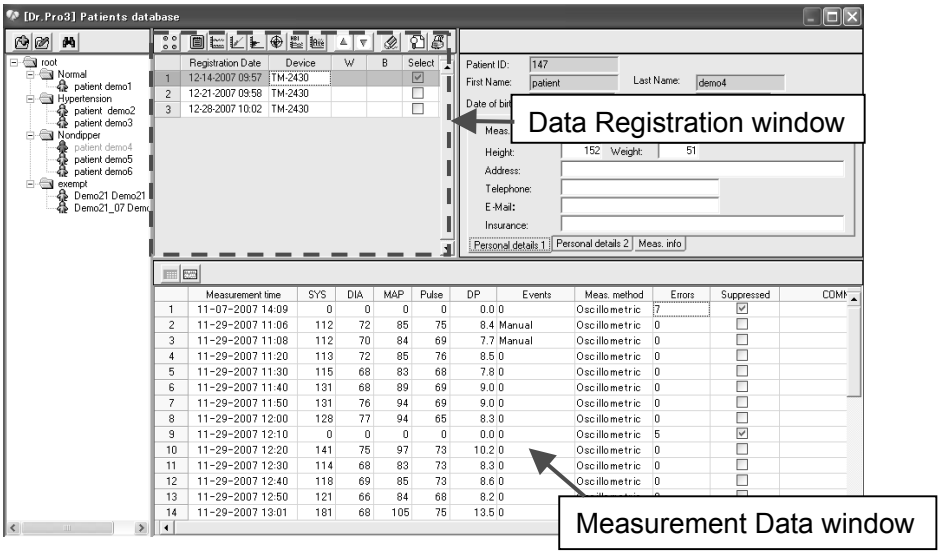
1. Click [Open database] at the quick startup menu.



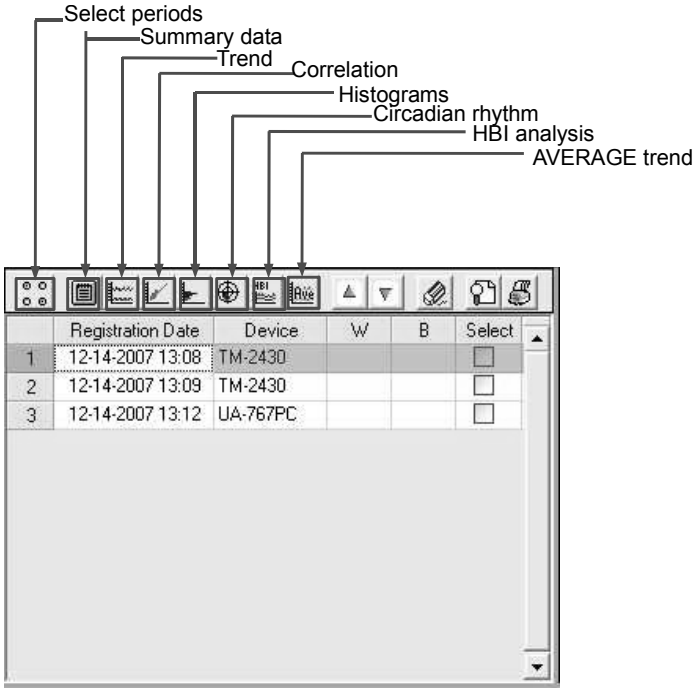
2. Select the patient data from the group list.



3. Click the registration date to be analyzed from the Data Registration window. The list of measurement data will be displayed in the Measurement Data window.



4. Click the registration dates to be analyzed from the Data Registration window and click the Select box.



The following items can be analyzed. For details, refer to “8-6 Data Analysis Window.”

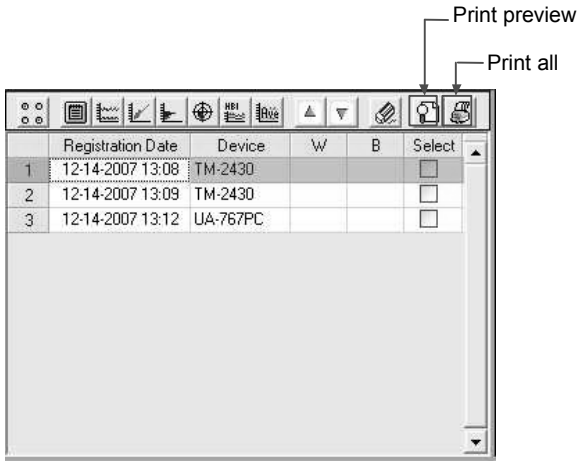
Menu	Refer to
Select periods	8-6-1
Summary data	8-6-2
Trend	8-6-3
Correlation	8-6-4
Histograms	8-6-5
Circadian rhythm	8-6-6
HBI analysis	8-6-7
AVERAGE trend	8-6-8

6-5 Printing the Data

Prints the analyzed data.

For details, refer to “8-7 Printing the Analyzed Data.”

1. Print preview is available in the Data Registration window. Click [Print all] to print all the printable items.



2. The analyzed results can be printed according to the following categories.
   For details on settings of [Full] or [Partial], [Sleep] and [Awake], refer to “8-6 Data Analysis Window.”

Printing in the Summary Data window

- [Full] tab window → Click [Print] to print.
- [Partial] tab window → Click [Print] to print.
- [Awake] tab window → Click [Print] to print.
- [Sleep] tab window → Click [Print] to print.

Printing in the Trend window

- [Individual printing] → Prints a trend graph.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the Correlation window

- [Individual printing] → Prints correlation plots.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the Histograms window

- [Individual printing] → Prints histograms.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the Circadian Rhythm window

- [Individual printing] → Prints circadian rhythm plots.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the HBI Analysis window

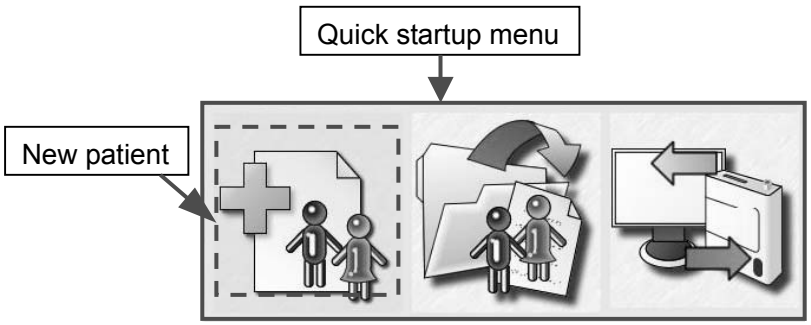
- [Individual printing] → Prints HBI analysis plots.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the AVERAGE Trend window

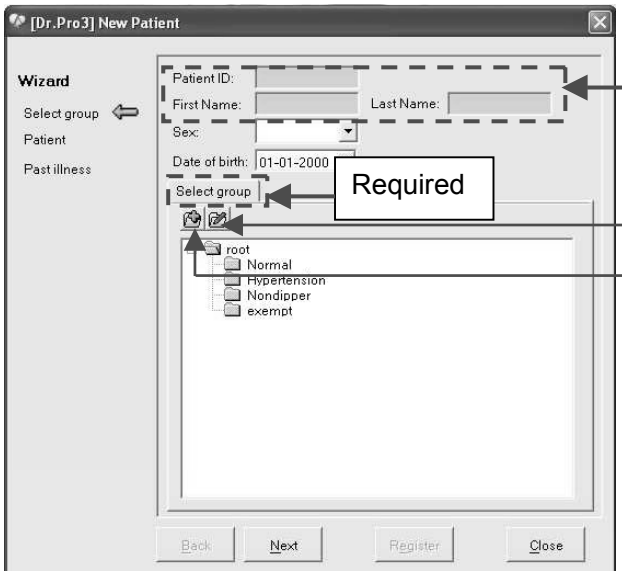
- [Individual printing] → Prints an hourly average trend graph.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

7. NEW PATIENTS

1. Click [New patient] at the quick startup menu.



2. Select Group window



Data must be entered in these three fields.

Required

[Rename group] icon

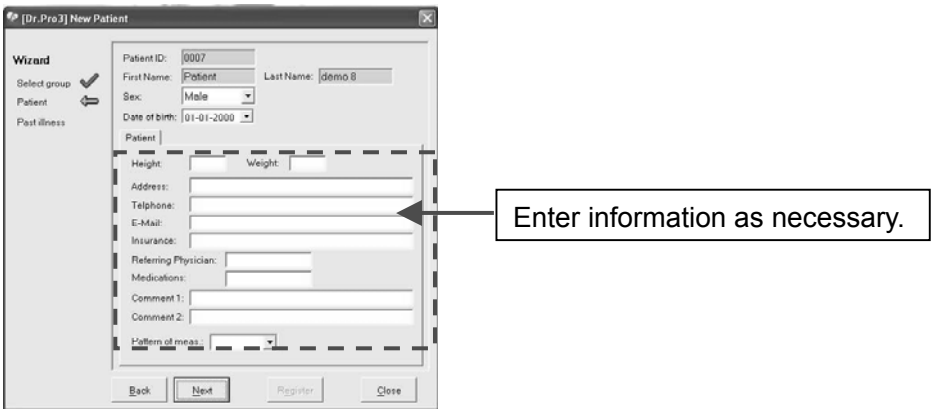
[Add group] icon

Enter information as necessary.

Item	Description
Patient ID (Required)	Enter the patient ID using a maximum of 20 characters.
First name (Required)	Enter the patient's first name using a maximum of 30 characters.
Last name (Required)	Enter the patient's last name using a maximum of 30 characters.
Sex	Select from the pulldown menu.
Date of birth	Enter in the MM-DD-YYYY format or select from the pulldown menu.
Select group (Required)	Point the mouse to the group folder. To add a group or rename the group, click the [Add group] or [Rename group] icon, or right-click to display "Add group" and "Rename group."

When all the necessary items have been entered, click [Next].

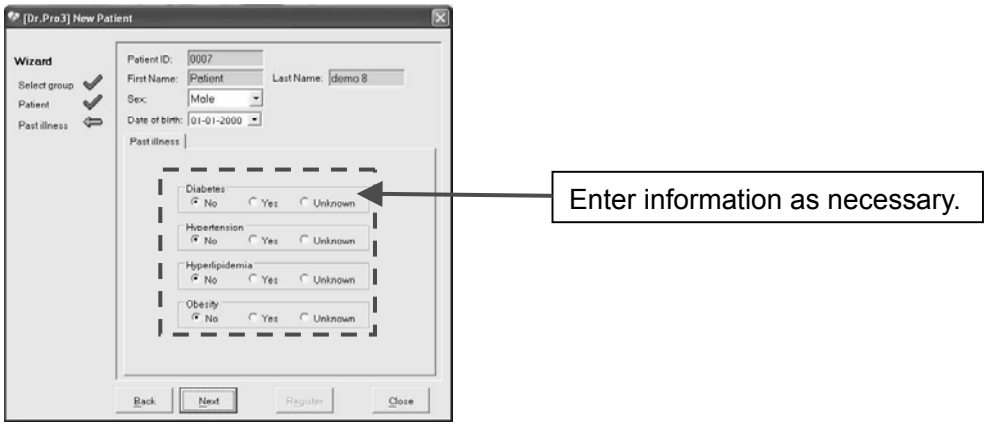
3. Patient's Personal Information window



Item	Description
Height	Enter the patient's height in 0-99999. (Place a decimal point as necessary.)
Weight	Enter the patient's weight in 0-99999. (Place a decimal point as necessary.)
Address	Enter the patient's address using a maximum of 50 characters.
Telephone	Enter the patient's telephone number using a maximum of 20 characters between 0 to 9 and a hyphen (-).
E-Mail	Enter the patient's e-mail address using a maximum of 50 characters.
Insurance	Enter the patient's insurance carrier.
Referring physician	Enter the doctor's name using a maximum of 30 characters.
Medications	Enter the patient's medications using a maximum of 60 characters.
Comment 1	Enter comments using a maximum of 200 characters.
Comment 2	Enter comments using a maximum of 200 characters.
Pattern of meas. (Pattern of measurement)	Select from the pulldown menu.

When all the necessary items have been entered, click [Next].

4. Past Illness window



Item	Description
Diabetes	Select from "No," "Yes" and "Unknown."
Hypertension	Select from "No," "Yes" and "Unknown."
Hyperlipidemia	Select from "No," "Yes" and "Unknown."
Obesity	Select from "No," "Yes" and "Unknown."

When all the necessary items have been entered, click [Next].

Then, click [Register]. The Confirm window opens.

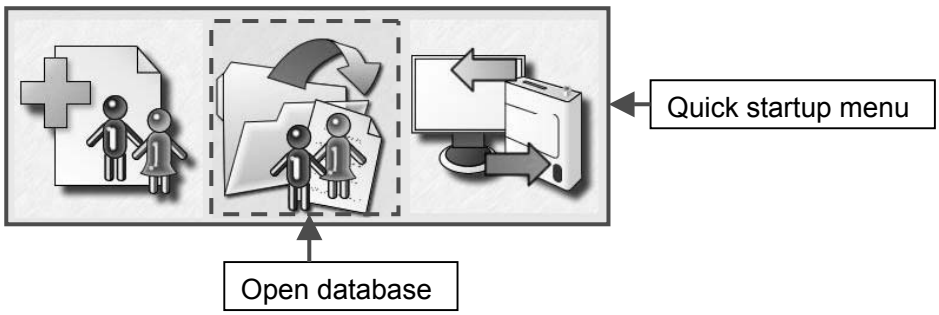
5. Confirm window

Click [OK] to register the new patient.

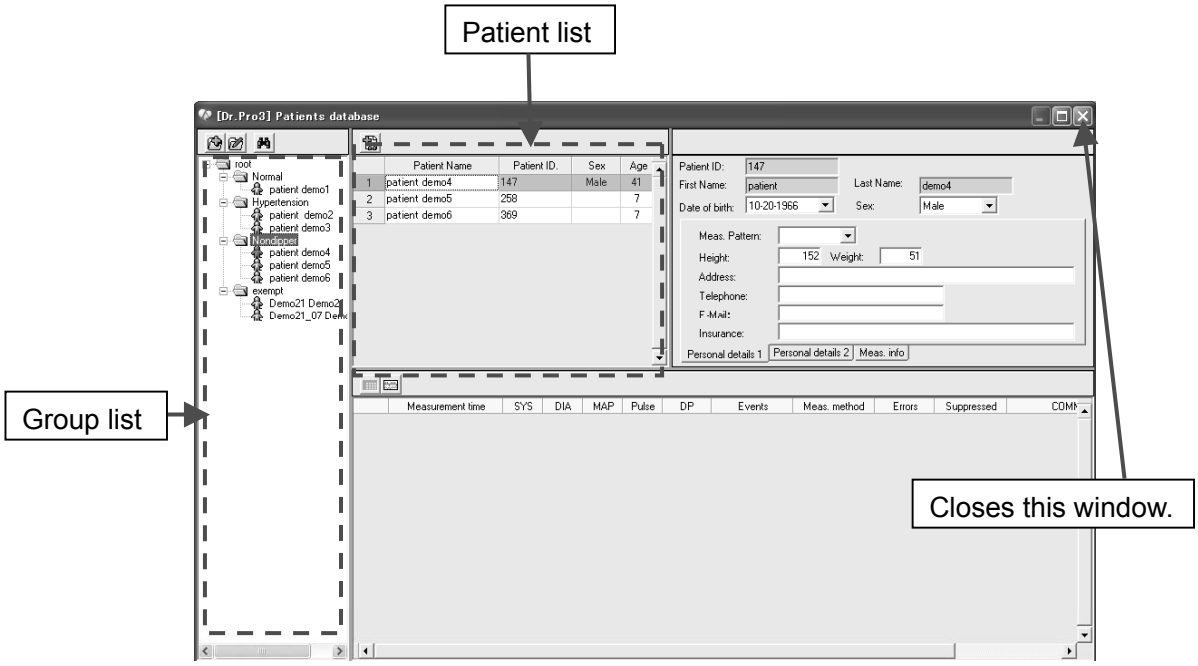
8. MANAGING DATA

Manages the group and patient database.

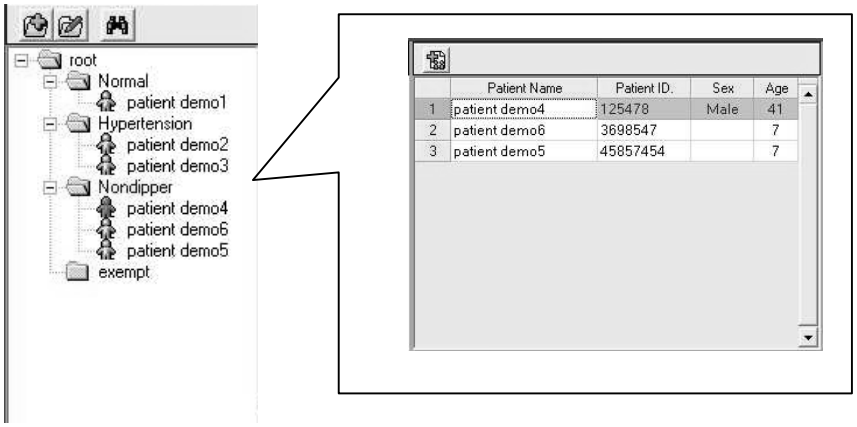
Click [Open database] at the quick startup menu.



Patients Database window



Click a folder in the group list. The relevant data is displayed in the patient list.



8-1 Editing the Group List

Adds or renames a group, and performs a search.

NOTE
Adding and renaming a group can be performed either by clicking on each icon or by right-clicking the group folder.

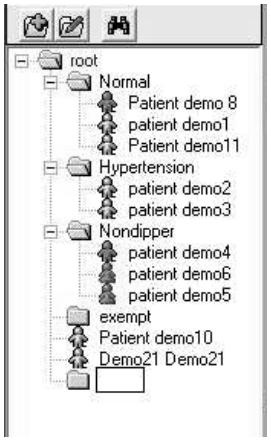
8-1-1 [Add group]

(1) Click the folder into which a group will be added.

(2) Click the [Add group] icon.

(3) A new folder is added.

(4) Enter the group name.



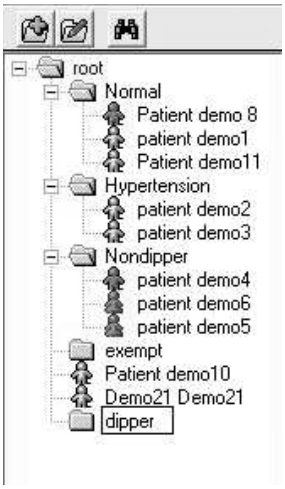
8-1-2 [Rename group]

Note: *Patient names can not be changed.*

(1) Click a folder to rename.

(2) Click the [Rename group] icon.

(3) Enter a group name.



8-1-3 [Search]

(1) Click the [Search] icon to open the Search Data window.

(2) Enter search items.

(3) Click [Search].

(4) The search results will be displayed.

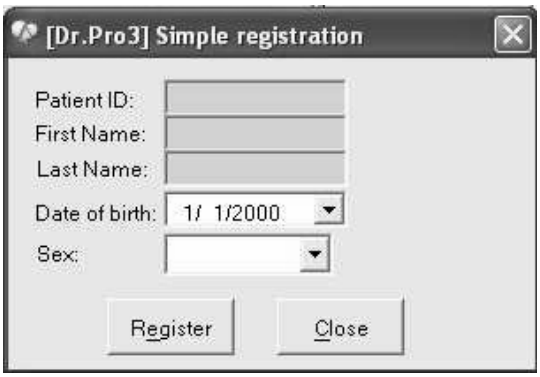
8-2 Editing the Patient List

Adds a patient.

8-2-1 [New patient]

(1) Click a folder from the group list into which a patient will be added.

(2) Click the [New patient] icon to open the Simple Registration window.



Enter the following items.

- Patient ID (Required)
- First name (Required)
- Last name (Required)
- Date of birth
- Sex

When all the necessary items have been entered, click [Register].

(3) The Confirm window opens.

(4) Click [OK] to add the patient.

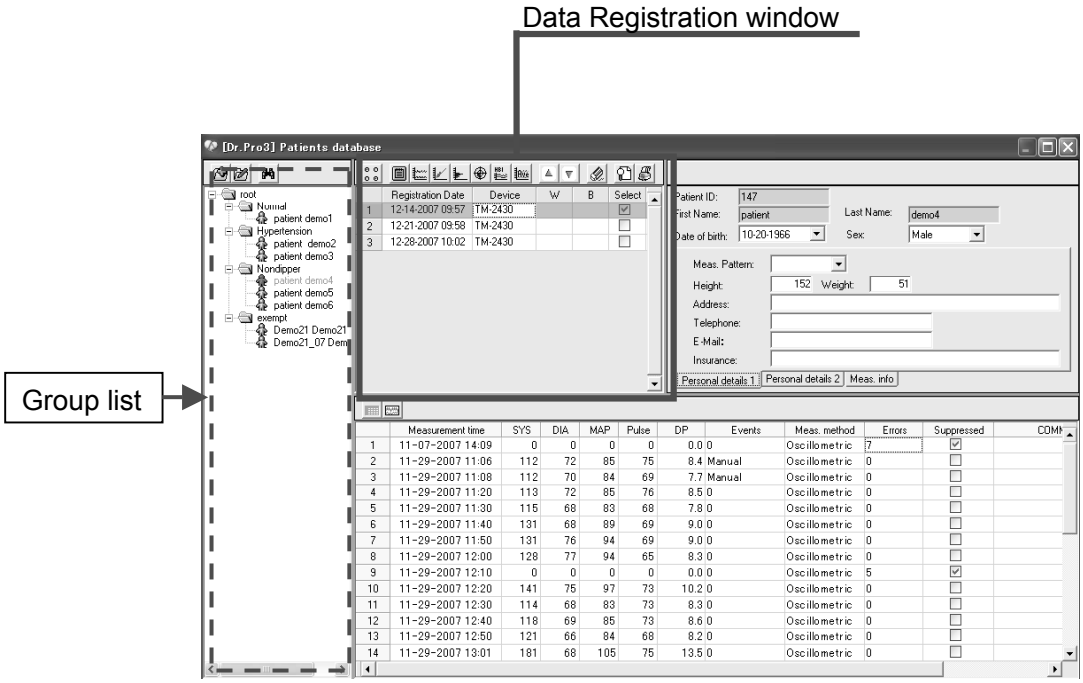
Click [Close] to complete the operation.

8-3 Data Registration Window

Displays and prints the analyzed results of measurement data.

8-3-1 Opening the data registration window

Click a patient name from the group list to open the Data Registration window.



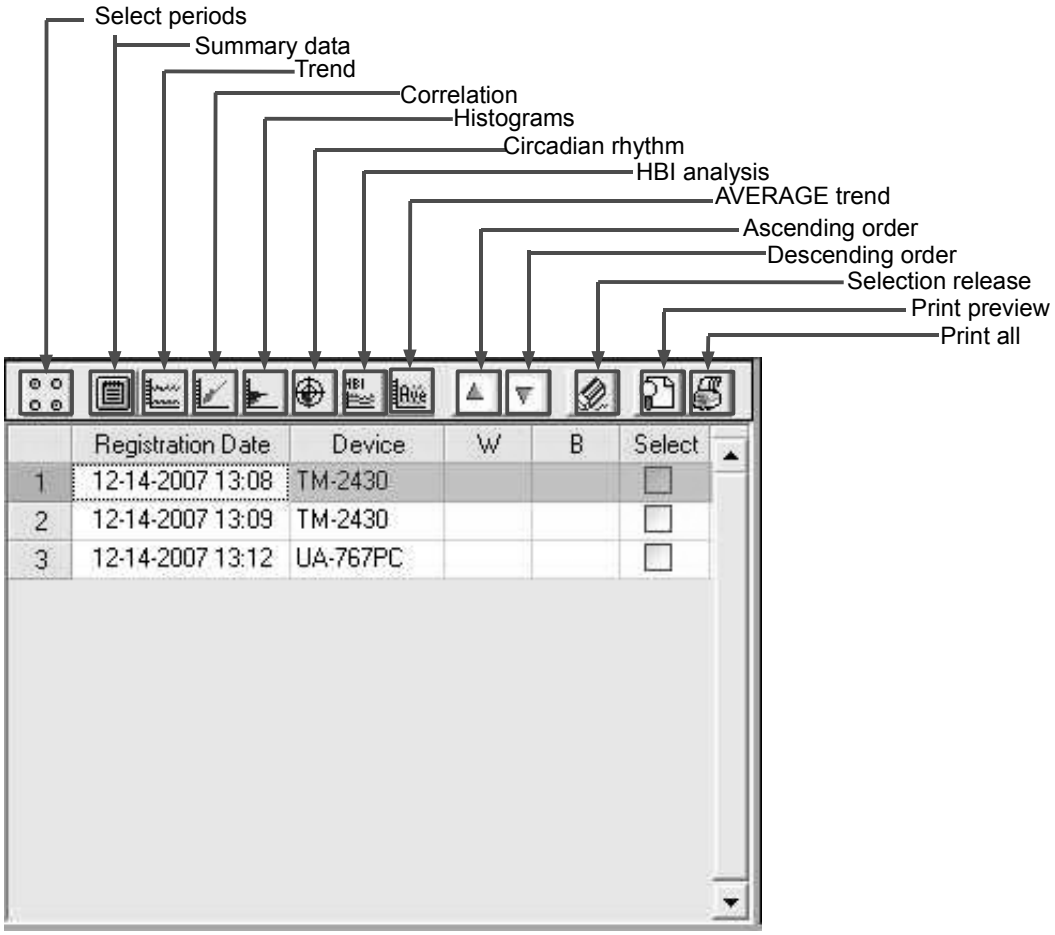
Items in the Data Registration window

Item	Description
Registration date	Displays the date when the data is uploaded (received).
Device	Displays the model of the blood pressure monitor that was used.
W (Wake time)	Displays the wake time.
B (Bedtime)	Displays the bedtime.
Select	Click the box to include in data analysis.
CSV	Displays a data format. 2C: CSV-imported data format of Doctor Pro2 2D: DAT-imported data format of Doctor Pro2 3C: CSV-imported data format of Doctor Pro3 Blank: Standard measurement data

NOTE
The CSV column is usually not displayed. To display the column, adjust the column widths of the Data Registration window.

8-3-2 Selecting an analysis icon

Click on an icon in the Data Registration window to perform various analyses.



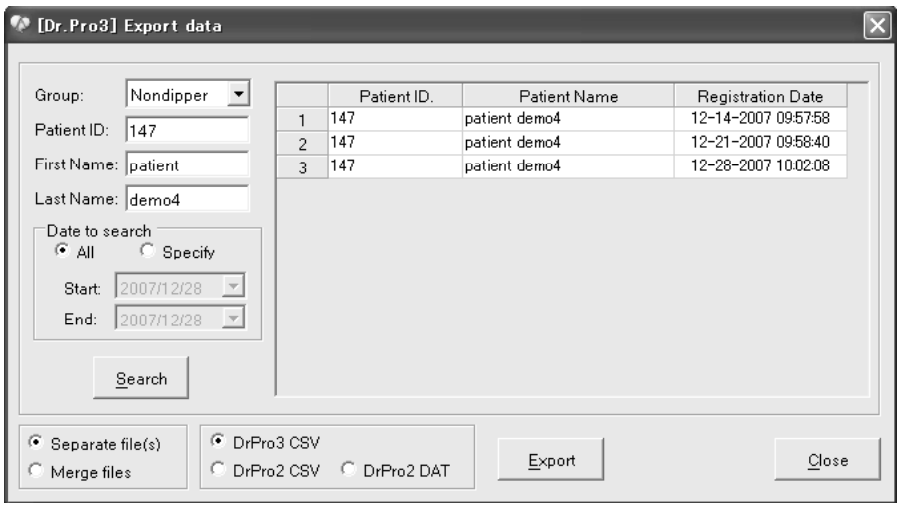
Note: *Click the Select box from the registration date to perform various analyses. When the TM-2430 is used, select a maximum of two data.*

Analysis menu

Menu	Refer to	Description
Select periods	8-6-1	Defines specific periods of time within an opened data file for custom data analysis. Two periods, full analysis and partial analysis may be defined for each data file.
Summary data	8-6-2	Displays statistical data.
Trend	8-6-3	Displays systolic blood pressure, diastolic blood pressure, mean arterial blood pressure, pulse (heart rate) and double product trends.
Correlation	8-6-4	Displays correlation plots of systolic blood pressure to diastolic blood pressure, and diastolic blood pressure to pulse. The scatter diagram allows easy observation of the correlation between systolic and diastolic blood pressures; the minimum and maximum values, the magnitude of fluctuation and the density of a 24-hour blood pressure data.

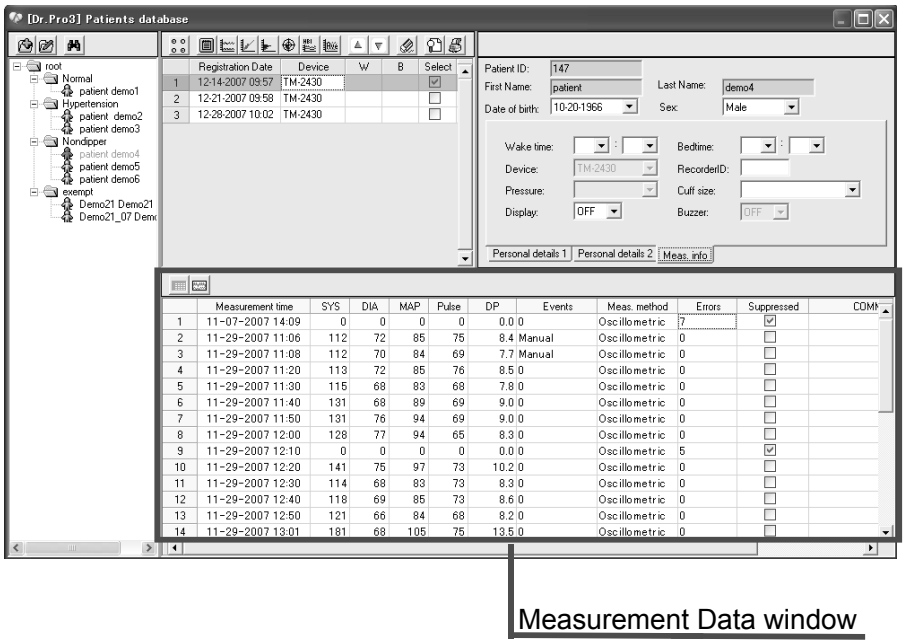
Menu	Refer to	Description
Histograms	8-6-5	Displays the frequency distribution of the measurement data. Allows easy observation of the data that occurs the most frequently, the frequency distribution and the distribution width during the analysis period.
Circadian rhythm	8-6-6	Displays the cosinor analysis graph, the graph showing the estimated amplitude and peak position based on the 95% confidence interval, and the numerical data. ***Note**: Not available with the UA-767PC and UB-511USB.*
HBI analysis	8-6-7	Displays the graph showing the hyperbaric area and hypobaric area, and the numerical data converted into a one-day period. Hyperbaric: that area exceeding the user-defined limits for the sleep and awake sections. Hypobaric: that area not reaching the user-defined limits for the sleep and awake sections. ***Note**: Not available with the UA-767PC and UB-511USB.*
AVERAGE trend	8-6-8	Displays the trend of hourly average values for systolic blood pressure, diastolic blood pressure, mean arterial blood pressure and pulse (heart rate).
Ascending order		Sorts the registration date in the ascending order.
Descending order		Sorts the registration date in the descending order.
Selection release		Removes the check mark from the select box.
Print preview	8-7-1	Displays a print preview of the data selected from the registration date.
Print all	8-7-2	Select graph options, set printing parameters and print.

When the registration date column is double-clicked, the Export Data window opens. For details, refer to “11-2 Exporting Files.”



8-4 Measurement Data Window

Displays measurement data in detail.



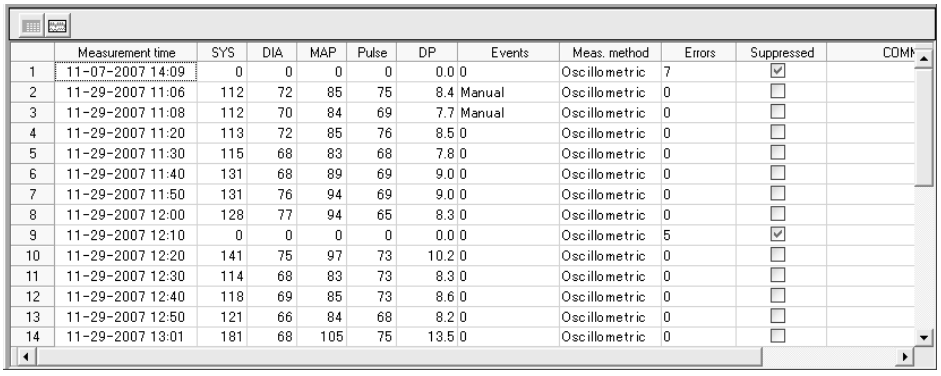
Items in the Measurement Data window

Item	Description
No.	Measurement No.
Measurement time	Date and time when the measurement is performed.
SYS	Systolic blood pressure
DIA	Diastolic blood pressure
MAP	Mean arterial blood pressure, obtained by MAP=DIA+(SYS-DIA)/3.
Pulse	Pulse rate
DP	Double Product, obtained by DP=SYS×Pulse/1000.
Events	Only for the TM-2430. Displays the measurement during sleep or manual measurement. (Always “0” for the UA-767PC/UB-511USB.)
Meas. method (Measurement method)	Displays the measurement method, Korotkoff or oscillometric.
Errors	Displays individual errors. (Displays error codes for the TM-2430.) (Always “0” for the UA-767PC/UB-511USB.)
Suppressed	Click the data to exclude from data analysis.
Comments	Enter comments using a maximum of 20 characters.
Scroll bars	Located at the bottom and right of the screen to scroll the data. Data can also be scrolled using the arrow keys or the mouse.

8-4-1 Switching the measurement data window

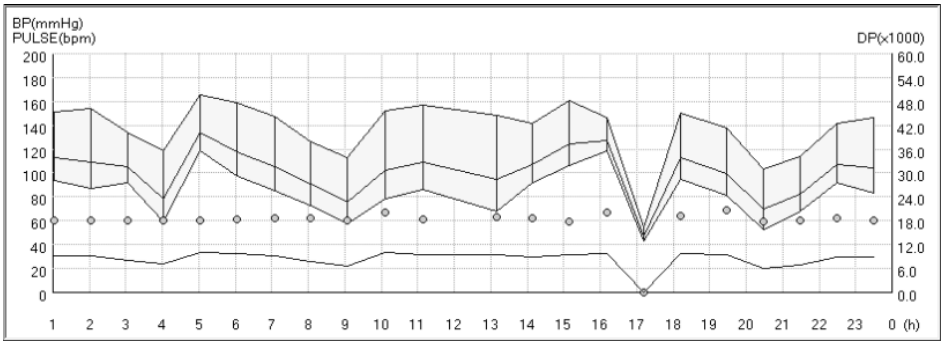
Clicking the icon in the Measurement Data window switches the window as follows.

BP Data List window



	Measurement time	SYS	DIA	MAP	Pulse	DP	Events	Meas. method	Errors	Suppressed	COM
1	11-07-2007 14:09	0	0	0	0	0.0	0	Oscillometric	7	☑	
2	11-29-2007 11:06	112	72	85	75	8.4	Manual	Oscillometric	0	☐	
3	11-29-2007 11:08	112	70	84	69	7.7	Manual	Oscillometric	0	☐	
4	11-29-2007 11:20	113	72	85	76	8.5	0	Oscillometric	0	☐	
5	11-29-2007 11:30	115	68	83	68	7.8	0	Oscillometric	0	☐	
6	11-29-2007 11:40	131	68	89	69	9.0	0	Oscillometric	0	☐	
7	11-29-2007 11:50	131	76	94	69	9.0	0	Oscillometric	0	☐	
8	11-29-2007 12:00	128	77	94	65	8.3	0	Oscillometric	0	☐	
9	11-29-2007 12:10	0	0	0	0	0.0	0	Oscillometric	5	☑	
10	11-29-2007 12:20	141	75	97	73	10.2	0	Oscillometric	0	☐	
11	11-29-2007 12:30	114	68	83	73	8.3	0	Oscillometric	0	☐	
12	11-29-2007 12:40	118	69	85	73	8.6	0	Oscillometric	0	☐	
13	11-29-2007 12:50	121	66	84	68	8.2	0	Oscillometric	0	☐	
14	11-29-2007 13:01	181	68	105	75	13.5	0	Oscillometric	0	☐	

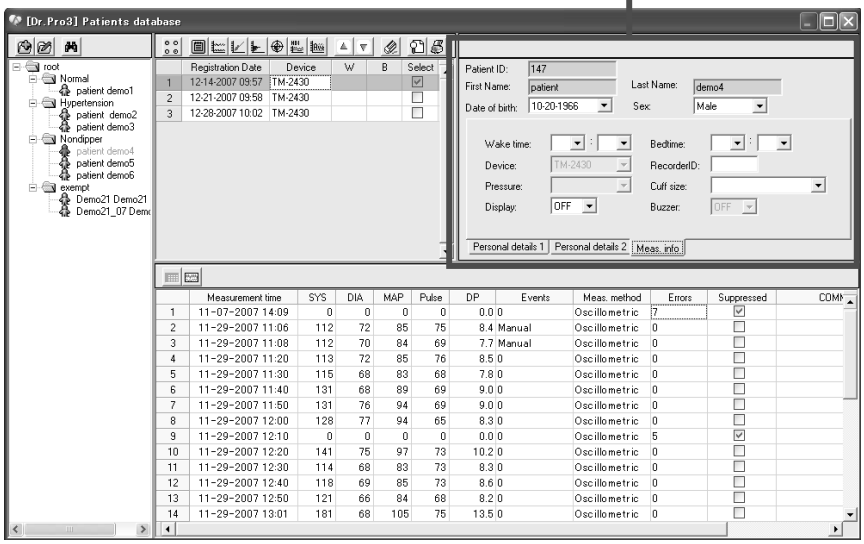
Simple Trend window



8-5 Patient Information window

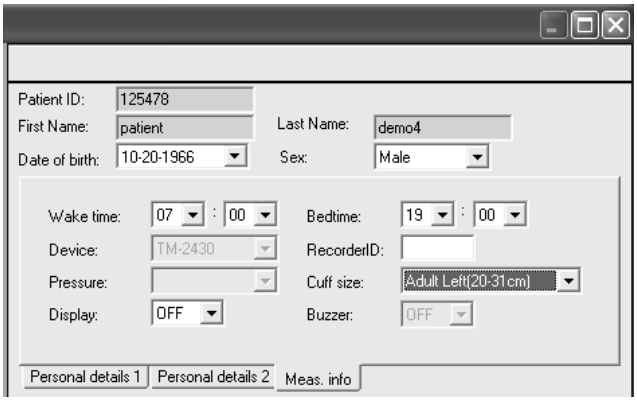
Edits the patient's personal information and device information.

Patient Information window

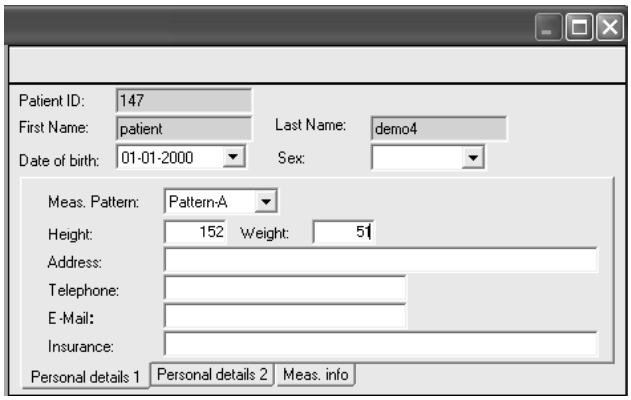


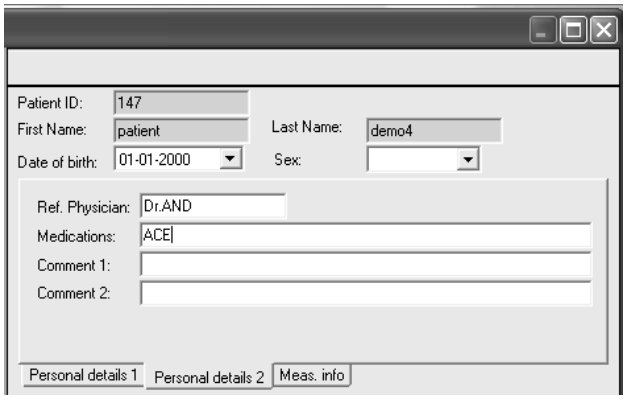
The Patient Information window has three tabs.

・[Meas. info.] tab to edit the device information.



・[Personal details] tabs to edit the patient's personal information.



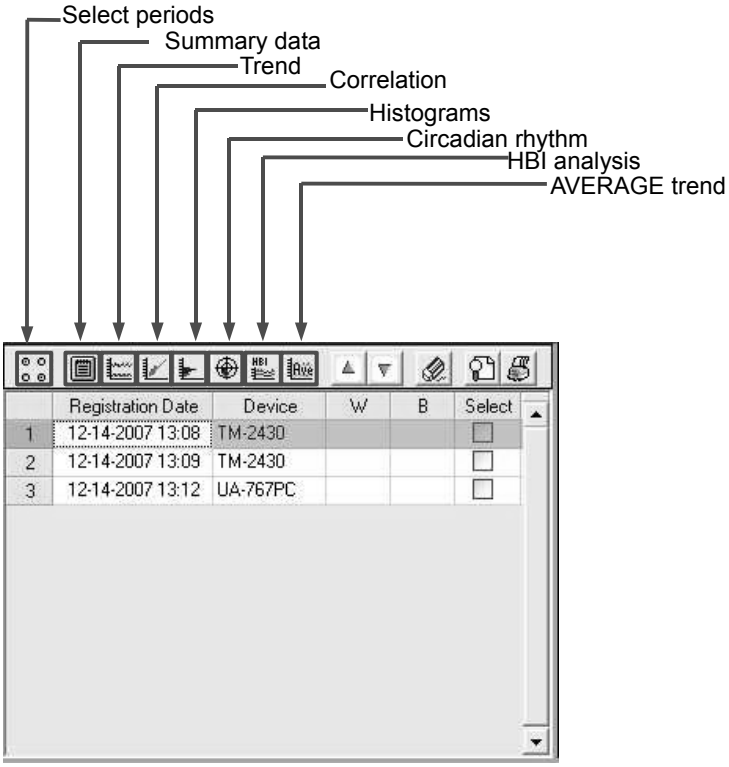


Item	Description
Patient ID (Required)	Enter the Patient ID using a maximum of 20 characters.
First name (Required)	Enter the patient's first name using a maximum of 30 characters.
Last name (Required)	Enter the patient's last name using a maximum of 30 characters.
Date of birth	Enter in the MM-DD-YYYY format or select from the pulldown menu.
Sex	Select from the pulldown menu.
Wake time	Enter in the 24-hour format.
Bedtime	Enter in the 24-hour format.
Device	Select from the pulldown menu.
Recorder ID	Enter the recorder ID using a maximum of 2 characters between 0 to 9.
Pressure	Select from the pulldown menu.
Cuff size	Select from the pulldown menu.
Display	Select from the pulldown menu.
Buzzer	Select from the pulldown menu.
Meas. pattern (Pattern of measurement)	Select from the pulldown menu.
Height	Enter the patient's height in 0-99999. (Place a decimal point as necessary.)
Weight	Enter the patient's weight in 0-99999. (Place a decimal point as necessary.)
Address	Enter the patient's address using a maximum of 50 characters.
Telephone	Enter the patient's telephone number using a maximum of 20 characters between 0 to 9 and a hyphen (-).
E-Mail	Enter the patient's e-mail address using a maximum of 50 characters.
Insurance	Enter the patient's insurance carrier..
Referring physician	Enter the doctor's name using a maximum of 30 characters.
Medications	Enter the patient's medications using a maximum of 60 characters.
Comment 1	Enter comments using a maximum of 200 characters.
Comment 2	Enter comments using a maximum of 200 characters.

8-6 Data Analysis Window

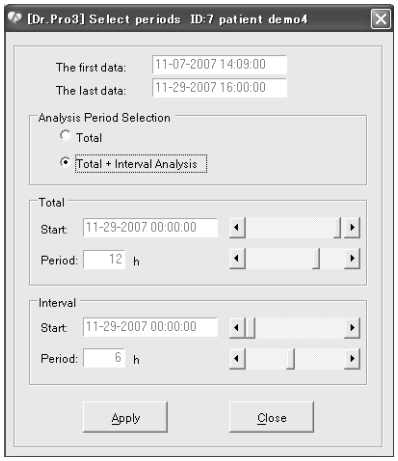
The Data Registration window has data analysis icons.

Select data in the Data Registration window, set the analysis period and click each analysis icon to analyze data.



8-6-1 Select periods

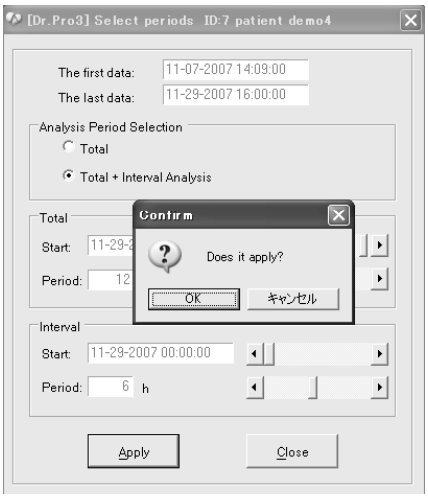
Sets the analysis period of the data selected in the Data Registration window. Without selecting periods, analysis will not be performed.



(1) Select “Total” or “Total + Interval Analysis” for the analysis period.

(2) Set the starting date and time and the period, using the scroll bars.

(3) Click [Apply].



(4) The Confirm window opens. Click [OK].

(5) Click [Close] to complete the operation.

8-6-2 Summary data

Displays statistical data. The Summary Data window has the following four tabs:

[Full] : Statistics based on all the data within the file

[Partial] : Statistics based on the data in the specified period.

[Awake] : Statistics based on the data during the waking hours.

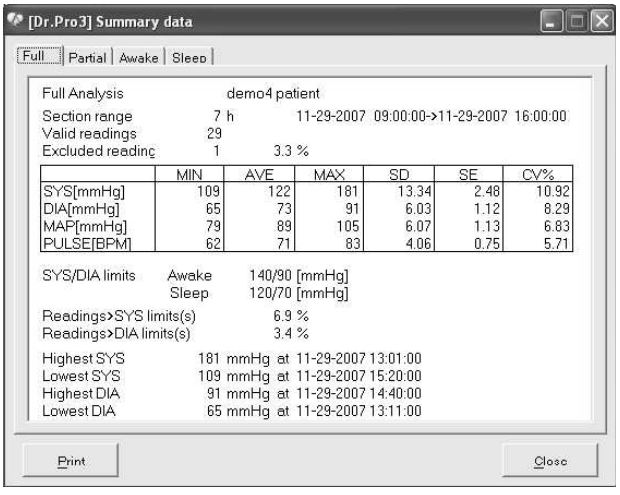
Note: *Waking hours are specified as those hours outside the identified sleeping hours.*

[Sleep] : Statistics based on the data during the specified sleeping hours.

Note: *Sleeping hours are specified as those hours outside the identified waking hours.*

To open, print and close the Summary Data window, follow the procedure below.

(1) Click the [Summary Data] icon to open the Summary Data window.



(2) Click one of the four data tabs, Full, Partial, Awake or Sleep. The Full tab will always be enabled.

The Partial, Sleep and Awake tabs will be enabled after they are specified. To enable the Partial tab, select “Total + Interval Analysis” for the analysis period. To enable the Sleep and Awake tabs, enter the wake time and the bedtime in the Patient Information window.

(3) To print the data for an individual Summary Data tab, select the tab you want to print and click [Print] on the lower left side of the window

(4) Click [Close] to close the Summary Data window.

Each of the four summary data is titled with the name of the tab and the patient name. For detailed information on Summary Data window items, see below:

Item	Description
Section range	The analysis period, starting date and time – ending date and time, for the activated Summary Data tab.
Valid readings	The total number of measurements taken during the analysis period, excluding any measurement errors or manually excluded readings.
Excluded readings	The combined total of measurement errors and manually excluded readings, and its percentage to the total number of measurements.
MIN (Minimum)	The minimum value for Systolic, Diastolic, MAP and Pulse measurements during the analysis period.
AVE (Average)	The average value for Systolic, Diastolic, MAP and Pulse measurements during the analysis period.
MAX (Maximum)	The maximum value for Systolic, Diastolic, MAP and Pulse measurements during the analysis period.
SD (Standard Deviation)	The Standard Deviation of the value for Systolic, Diastolic, MAP and Pulse measurements during the analysis period.
SE (Standard Error)	The Standard Error of the value for Systolic, Diastolic, MAP and Pulse measurements during the analysis period.
CV(%) (Coefficient of Variation)	The Coefficient of Variation for Systolic, Diastolic, MAP and Pulse measurements during the analysis period.
SYS/DIA limits	Systolic and Diastolic limits for the Awake and Sleep sections.
Readings > SYS limit(s)	The percentage of the Systolic measurement values greater than the specified Systolic limit. Refer to “12-4 Default Settings" for information on specifying the Systolic Blood Pressure Limit.
Readings > DIA limit(s)	The percentage of the Diastolic measurement values greater than the specified Diastolic limit. Refer to “12-4 Default Settings" for information on specifying the Diastolic Blood Pressure Limit.
Highest SYS (Systolic Value)	The highest Systolic value, and the date and time when the value is obtained during the analysis period.
Lowest SYS (Systolic Value)	The lowest Systolic value, and the date and time when the value is obtained during the analysis period.
Highest DIA (Diastolic Value)	The highest Diastolic value, and the date and time when the value is obtained during the analysis period.
Lowest DIA (Diastolic Value)	The lowest Diastolic value, and the date and time when the value is obtained during the analysis period.

8-6-3 Trend

Displays trends in a patient's blood pressure, pulse, MAP and DP calculation over time. The Trend window is a useful tool to observe the patient's circadian rhythm.

The Trend function is dependent on the following parameters:

1. Analysis period
2. Measurement Method
3. Sleep section
4. Blood pressure limits

(1) TM-2430

When the TM-2430 is used, the following four trends can be displayed in the Trend window:

- **Systolic/Diastolic Blood Pressure (BP Trend)**

  The vertical axis represents millimeters of mercury (mmHg) and the horizontal axis represents time. A vertical solid line connects the measurement's systolic and diastolic pressures. This line may be used to estimate the pulse pressure.

- **Pulse (Pulse Trend)**

  The vertical axis represents beats per minute (bpm) and the horizontal axis represents time. The pulse trend is represented by yellow dots.

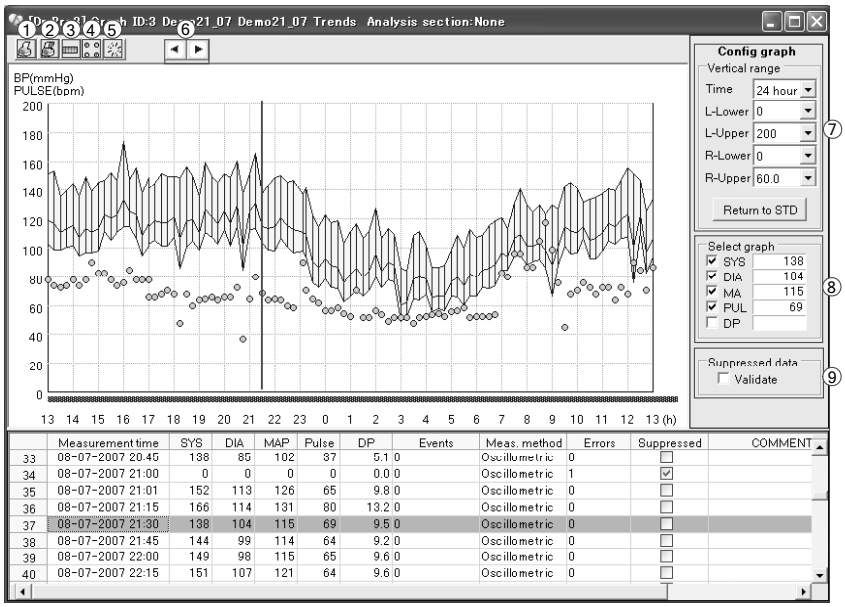
- **Mean Arterial Blood Pressure (MAP Trend)**

  The vertical axis represents millimeters of mercury (mmHg) and the horizontal axis represents time. The MAP Trend may be displayed on its own or in combination with the BP Trend. If the MAP Trend is combined with the BP Trend, it will appear between the Systolic and Diastolic Trend lines.

- **Double Product**

  The vertical axis represents mmHg·bpm/1000 and the horizontal axis represents time.

Icons in the Trend window



No.	Icon	Description
1	Individual printing	Prints a trend graph.
2	Print all	Opens the Conclusion Printing window. Select graph options, set printing parameters and click [Print].
3	List Disp/Not-Disp	Selects whether or not to display the list of measurement data below the trend graphs.
4	Select periods	Defines specific periods of time within an opened data file for custom data analysis. Two periods, full analysis and partial analysis may be defined for each data file.
5	Close	Closes the Trend window.
6	Left/right arrows	Moves the cursor to the left or right.
7	Config graph	Changes the graph axes settings.
8	Select graph	Click the box to display the graph, or if there is a check mark in the box and no graph is needed, click the box to remove the check mark.
9	Suppressed data	Selects whether or not to display the data excluded in the list of measurement data in a graph.

Click the [Close] icon or [X] in the upper right corner to close the Trend window.

(2) UA-767PC/UB-511USB

When the UA-767PC/UB-511USB is used, the following four trends can be displayed in the Trend window:

- **Systolic/Diastolic Blood Pressure (BP Trend)**

  The vertical axis represents millimeters of mercury (mmHg) and the horizontal axis represents time. The systolic pressure is represented by a solid red line; the diastolic pressure by a solid green line.

- **Pulse (Pulse Trend)**

  The vertical axis represents beats per minute (bpm) and the horizontal axis represents time. The pulse trend is represented by yellow dots.

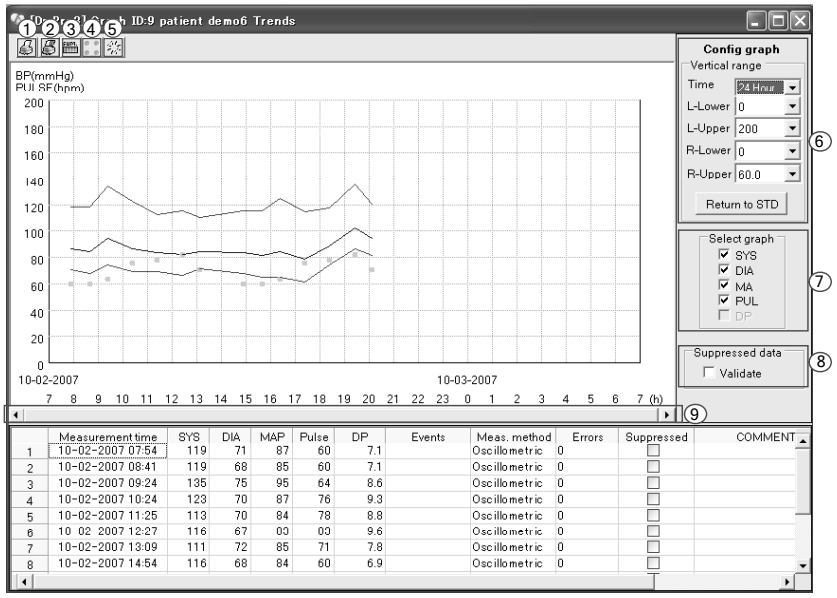
- **Mean Arterial Blood Pressure (MAP Trend)**

  The vertical axis represents millimeters of mercury (mmHg) and the horizontal axis represents time. The MAP Trend may be displayed on its own or in combination with the BP Trend. If the MAP Trend is combined with the BP Trend, it will appear between the Systolic and Diastolic Trend lines as a solid blue line.

- **Double Product**

  The vertical axis represents mmHg·bpm/1000 and the horizontal axis represents time.

Icons in the Trend window



No.	Icon	Description
1	Individual printing	Prints a trend graph.
2	Print all	Opens the Conclusion Printing window. Select graph options, set printing parameters and click [Print].
3	List Disp/Not-Disp	Selects whether or not to display the list of measurement data below the trend graphs.
4	Select periods	Defines specific periods of time within an opened data file for custom data analysis. Two periods, full analysis and partial analysis may be defined for each data file.
5	Close	Closes the Trend window.
6	Config graph	Changes the graph axes settings.
7	Select graph	Click the box to display the graph, or if there is a check mark in the box and no graph is needed, click the box to remove the check mark.
8	Suppressed data	Selects whether or not to display the data excluded in the list of measurement data in a graph.
9	Slider bar	Moves the range of the displaying date and time back and forth.

Click the [Close] icon or [X] in the upper right corner to close the Trend window.

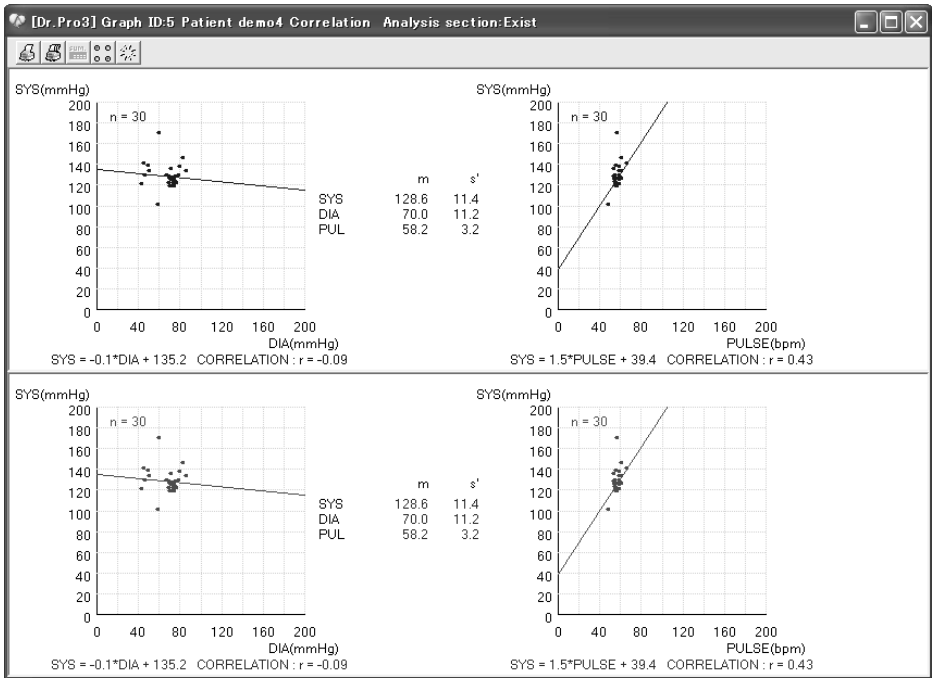
8-6-4 Correlation

The Correlation window offers a convenient way to view the relationship between the blood pressure parameters. Both Full and Partial Analysis Correlation Plots may be viewed for the following relationships:

1. Systolic versus Diastolic
2. Systolic versus Pulse (Heart Rate)
3. Statistical Data: Systolic, Diastolic, Pulse
   - Average
   - Standard Deviation, [SD]
   - Correlation Coefficient, [r]
   - Regression Line

The vertical axis represents systolic pressure, the horizontal axis represents the diastolic pressure on the left hand graph and pulse on the right hand graph. All the graphs have scales of 0 to 300 mmHg.

***Note**: If Partial Analysis is enabled, four graphs will appear. The first two graphs in the upper part of the window, in blue, are based on Full data. The second pair of graphs, in red, in the lower part of the window are created from valid data specified within Partial Analysis parameters.*



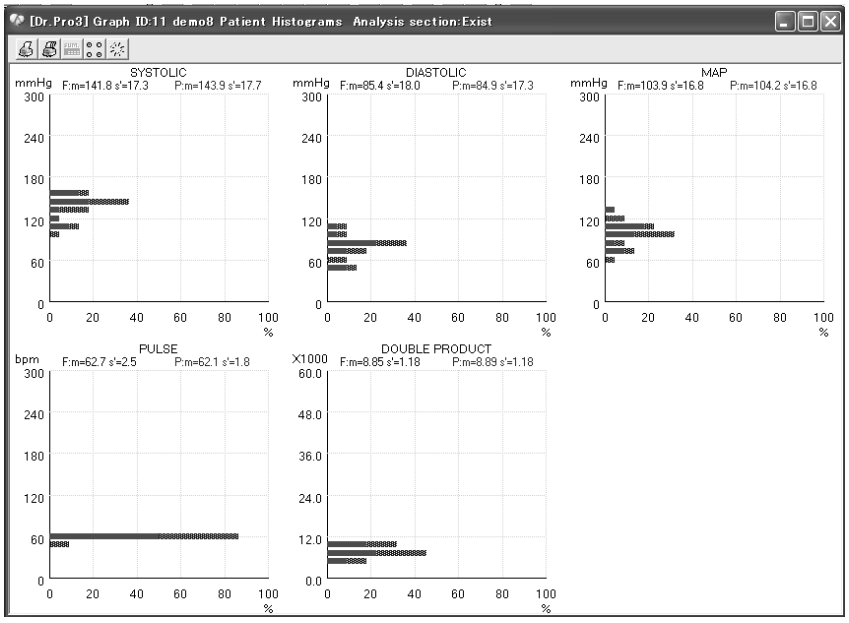
Click the [Close] icon or [X] in the upper right corner to close the Correlation window.

8-6-5 Histograms

The Histograms window offers a convenient way to quickly review the frequency distribution of the systolic, diastolic, mean arterial blood pressures, pulse (heart rate) measurements and DP, and the statistical data (average and standard deviation for each item).

> ***Note**: If Partial Analysis is enabled, the Histograms based on Full data are indicated in blue and the Histograms created from valid data specified within Partial Analysis parameters are indicated in red.*

The vertical scale represents 0 to 300 (mmHg or bpm) on all graphs except Double Product. The horizontal scale represents the percentage of total readings that occurred at the corresponding vertical level. The Histograms are displayed in blocks that represent a range of readings.

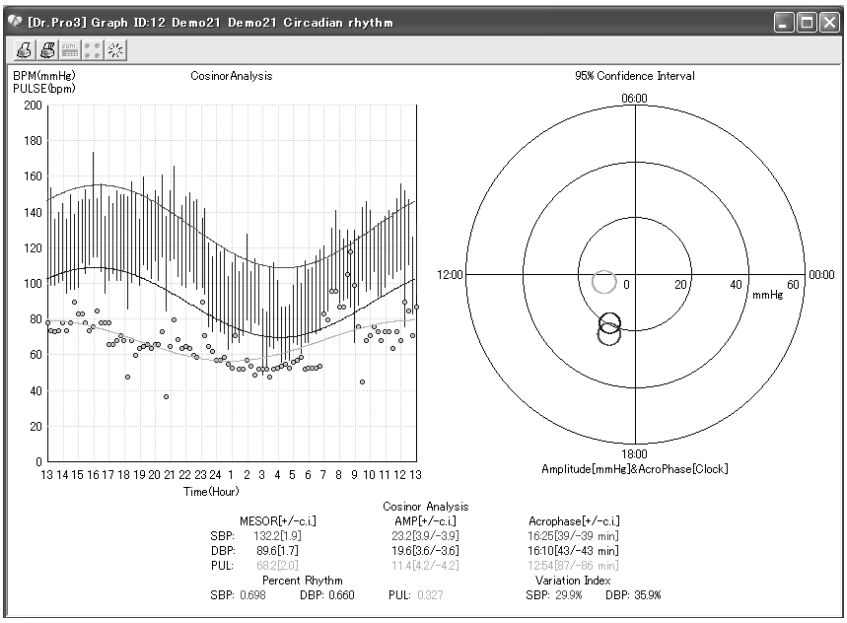


Click the [Close] icon or [X] in the upper right corner to close the Histograms window.

8-6-6 Circadian Rhythm

The Circadian Rhythm window shows the circadian rhythm of the systolic and diastolic blood pressures, and pulse (heart rate); obtained using the 24-hour cosinor analysis. The analysis starting time coincides with the starting time specified for the Full Analysis period.

The Circadian Rhythm window also shows the amplitude and peak value of the cosine wave based on the 95% confidence interval. The systolic blood pressure data is indicated in red, the diastolic blood pressure data, in blue, and the pulse data, in yellow.



Click the [Close] icon or [X] in the upper right corner to close the Circadian Rhythm window.

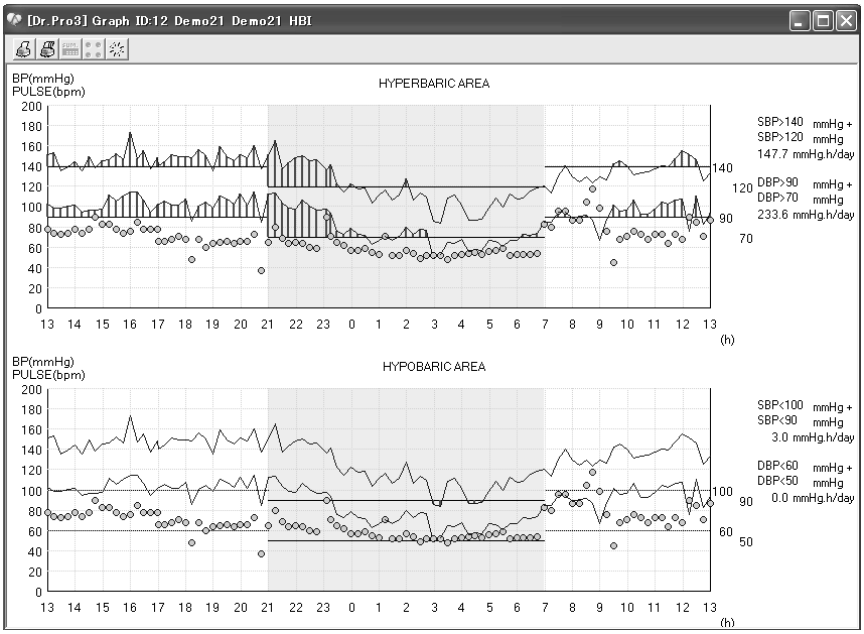
8-6-7 HBI Analysis

The HBI Analysis window shows two graphs arranged vertically.

The upper graph shows the hyperbaric area (in red) exceeding the user-defined hyperbaric limits for the systolic and diastolic blood pressures, and the numerical data converted into a one-day period.

The lower graph shows the hypobaric area (in red) not reaching the user-defined hypobaric limits for the systolic and diastolic blood pressures, and the numerical data converted into a one-day period.

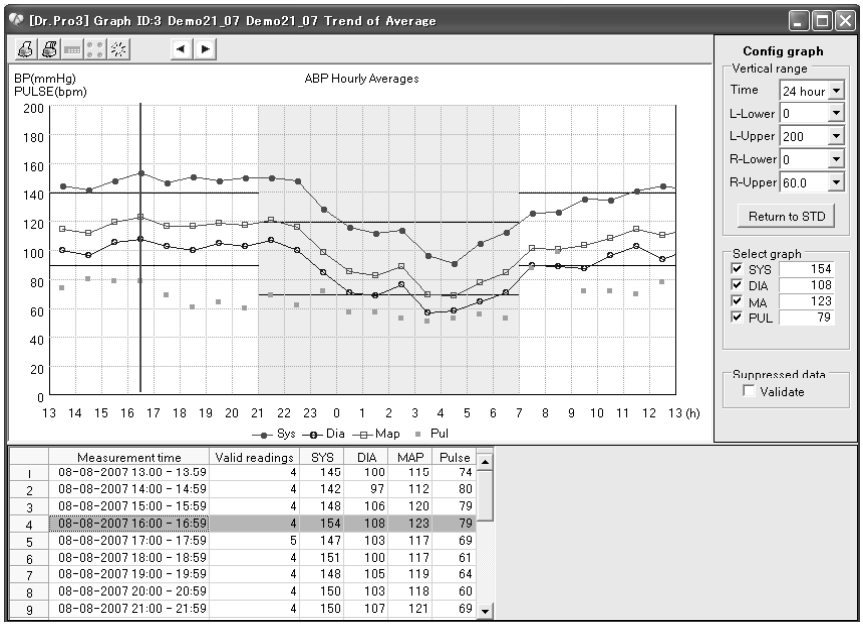
For both graphs, the analysis starting time coincides with the starting time specified for the Full Analysis period.



Click the [Close] icon or [X] in the upper right corner to close the HBI Analysis window.

8-6-8 AVERAGE Trend

The AVERAGE Trend window shows the trend of hourly average values for systolic blood pressure, diastolic blood pressure, mean arterial blood pressure and pulse (heart rate).

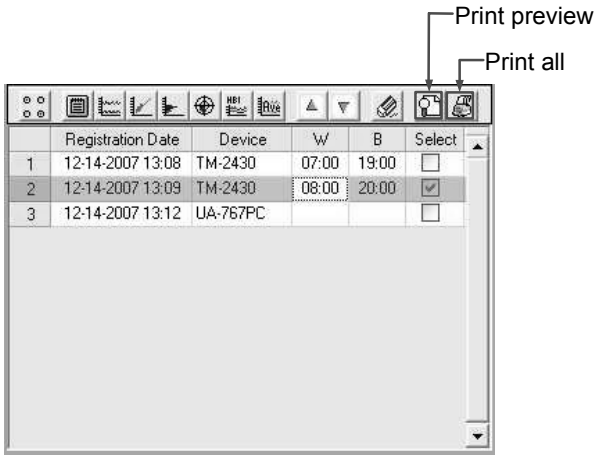


	Measurement time	Valid readings	SYS	DIA	MAP	Pulse
1	08-08-2007 13:00 - 13:59	4	145	100	115	74
2	08-08-2007 14:00 - 14:59	4	142	97	112	80
3	08-08-2007 15:00 - 15:59	4	148	106	120	79
4	08-08-2007 16:00 - 16:59	4	154	108	123	79
5	08-08-2007 17:00 - 17:59	5	147	103	117	69
6	08-08-2007 18:00 - 18:59	4	151	100	117	61
7	08-08-2007 19:00 - 19:59	4	148	105	119	64
8	08-08-2007 20:00 - 20:59	4	150	103	118	60
9	08-08-2007 21:00 - 21:59	4	150	107	121	69

Click the [Close] icon or [X] in the upper right corner to close the AVERAGE Trend window.

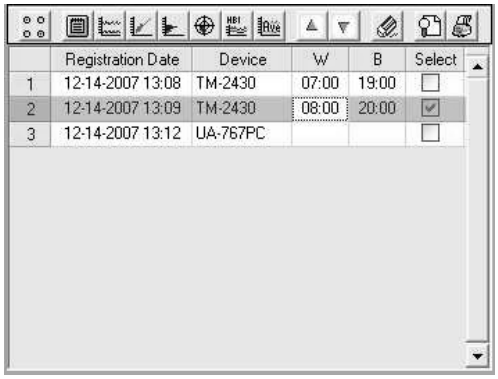
8-7 Printing the Analyzed Data

The analyzed data can be printed in the Data Registration window.

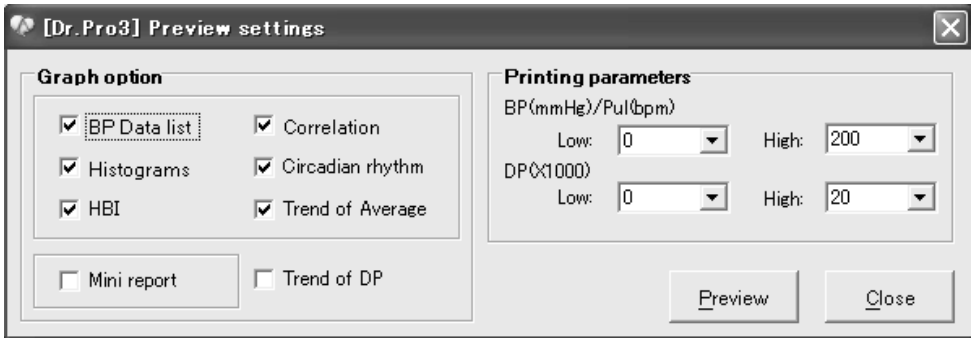


8-7-1 Printing procedure from the print preview window

(1) Select the registration date and click the [Print preview] icon ( ).



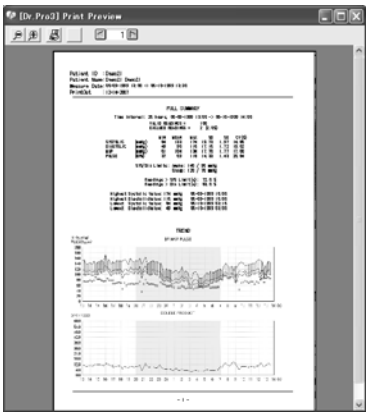
(2) Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.



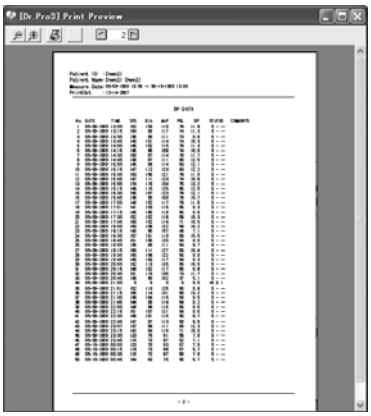
(3) Click [Preview].

(4) The Print Preview window opens. (The number of pages depends on the data selected. The example below is the print preview when all the items are selected in “Graph option.”)

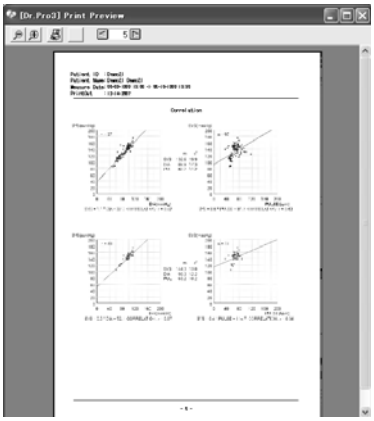
Page 1 (Summary+Trend)



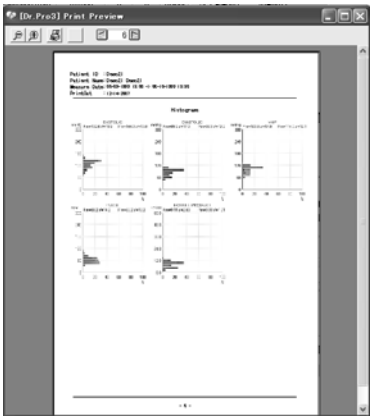
Page 2 (List)



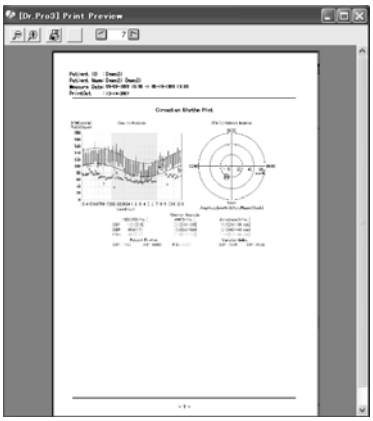
Page 3 (Correlation)



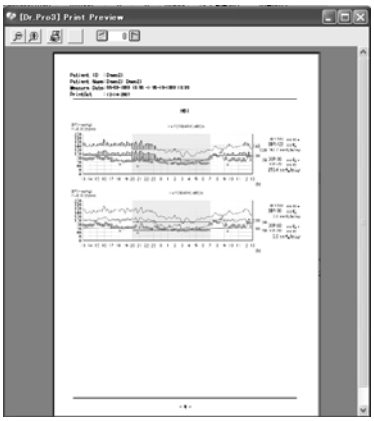
Page 4 (Histograms)



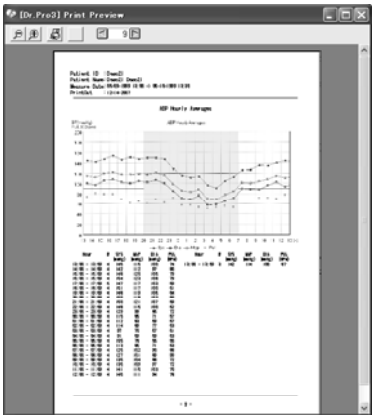
Page 5 (Circadian rhythm)



Page 6 (HBI analysis)



Page 7 (AVERAGE trend)



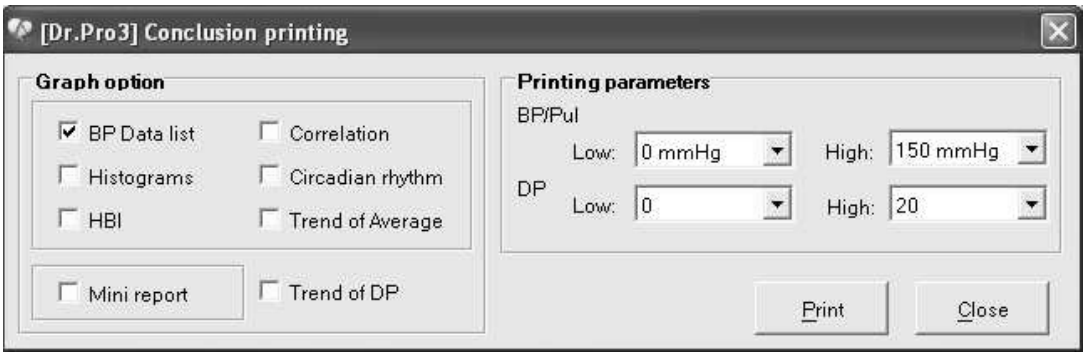
(5) Click the [Print all] icon ( ). The Conclusion Printing window opens.

(6) Change the settings in the Conclusion Printing window, if necessary.

(7) Click [Print].

8-7-2 Printing procedure without displaying the print preview

(1) Click the [Print all] icon.



(2) Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Select “Mini report” to print the summary data, trend and data list.

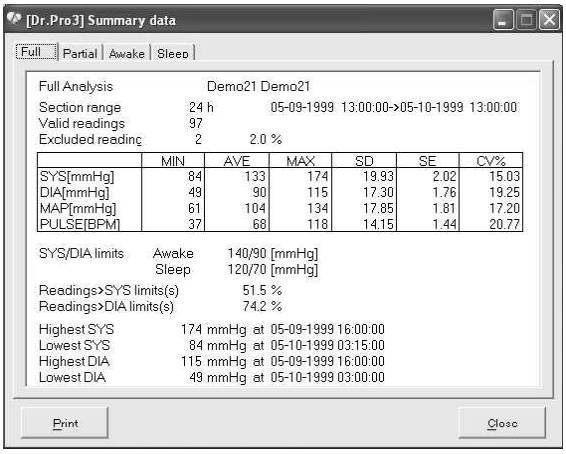
Select “Trend DP” to print the trend of double product.

(3) Click [Print].

8-7-3 Printing from each analysis window

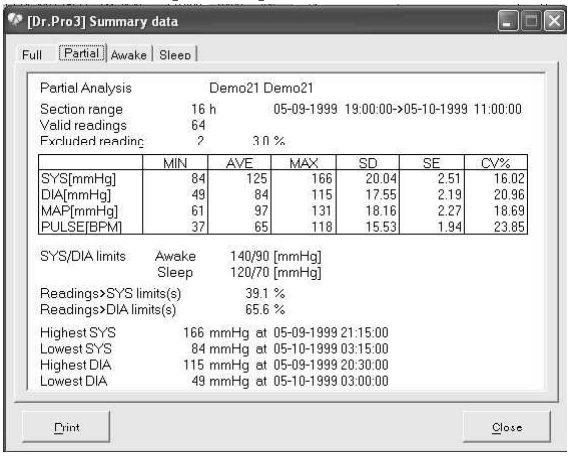
Printing in the Summary Data window

[Full] tab window



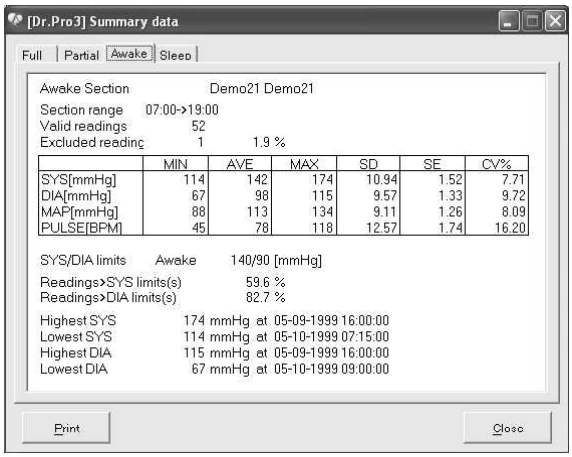
Click [Print].

[Partial] tab window



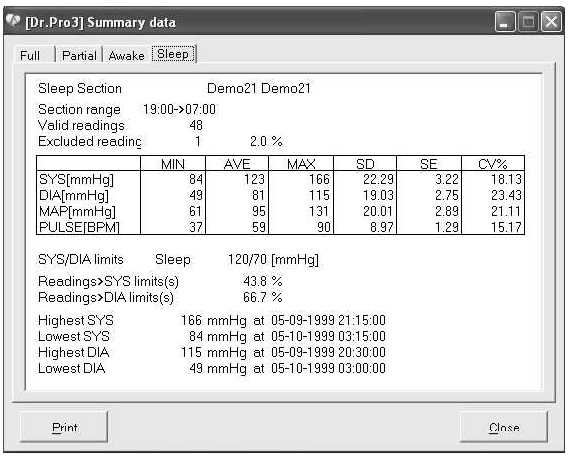
Click [Print].

[Awake] tab window



Click [Print].

[Sleep] tab window



Click [Print].

Printing in the Trend window

- [Individual printing] → Prints a trend graph.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the Correlation window

- [Individual printing] → Prints correlation plots.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the Histograms window

- [Individual printing] → Prints histograms.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the Circadian Rhythm window

- [Individual printing] → Prints circadian rhythm plots.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

Printing in the HBI Analysis window

- [Individual printing] → Prints HBI analysis plots.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

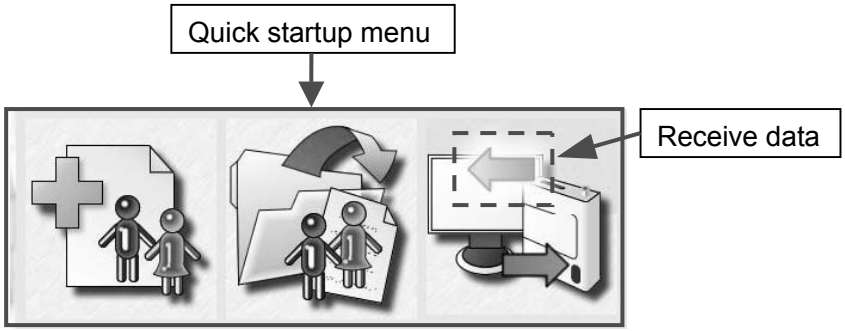
Printing in the AVERAGE Trend window

- [Individual printing] → Prints an hourly average trend graph.
- [Print all] → Click boxes as necessary in “Graph option” to print, and select the printing parameters from the pulldown menu.

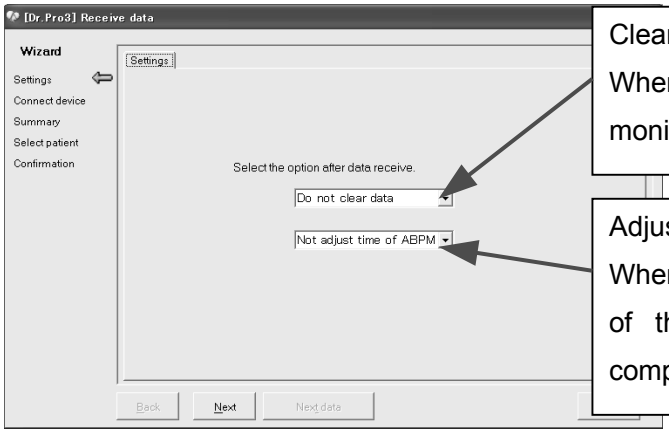
9. RECEIVING DATA

Receives the measurement data from the blood pressure monitor.

1. Click [Receive data] at the quick startup menu.



2. In the Settings window, select the option to perform after receiving the data.



Clearing the data

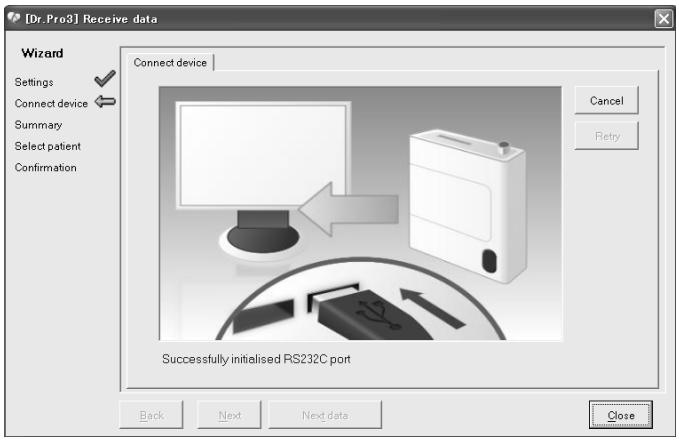
When “Clear data” is selected, the data in the monitor will be cleared after receiving the data.

Adjusting the time

When “Adjust time of ABPM” is selected, the clock of the monitor will be synchronized with the computer clock after receiving the data.

Click [Next].

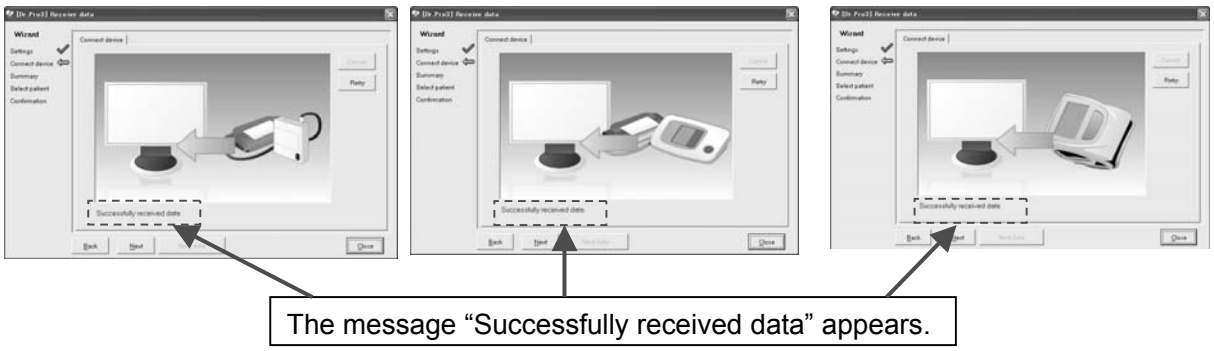
3. Receiving the data from the blood pressure monitor has begun.



NOTE (Only for the UA-767PC/UB-511USB)
While the PC is in communication with the blood pressure monitor, ” ---“ appears in the blood pressure monitor display. For details, refer to the blood pressure monitor instruction manual.

4. When data receiving has been completed, a message appears in the Connect Device window.

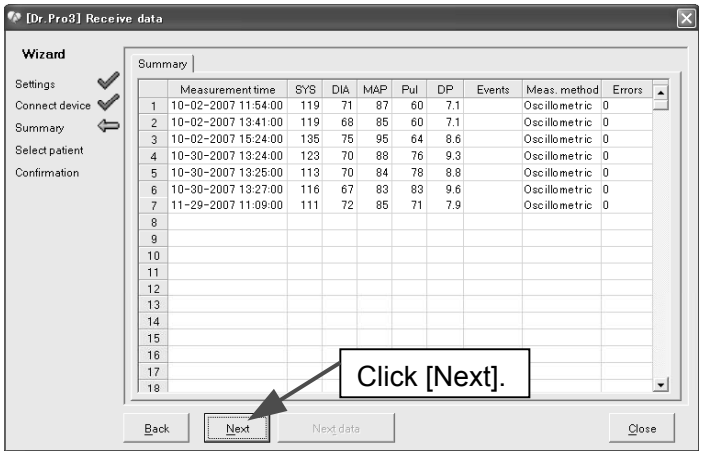
Connected to TM-2430 Connected to UA-767PC Connected to UB-511USB



Click [Next].

If an error occurs, click [Retry] to make a connection again.

5. The data received is displayed.

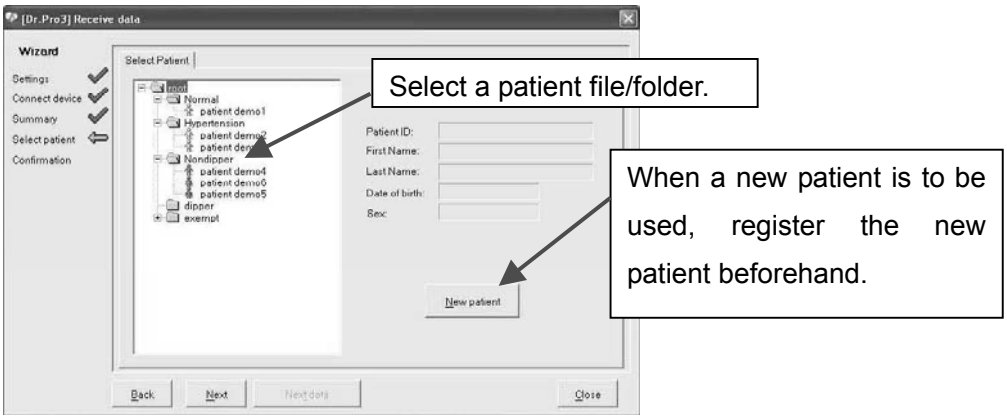


Click [Next].

6. Specify a file/folder to save the data.

Select from the list of registered patients the patient under whose name you would like to save data.

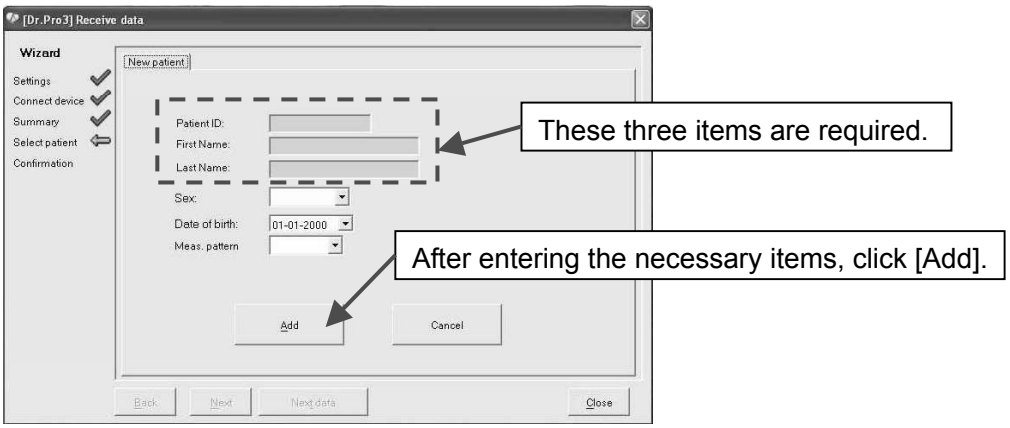
When a new patient is to be used, register the new patient beforehand.



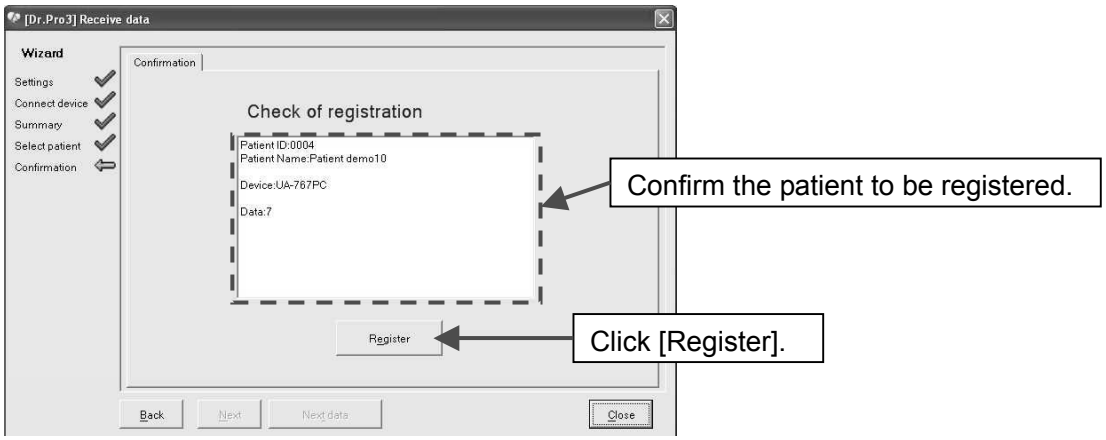
Click [Next].

・Click [New patient] to open the New Patient window and register a new patient.

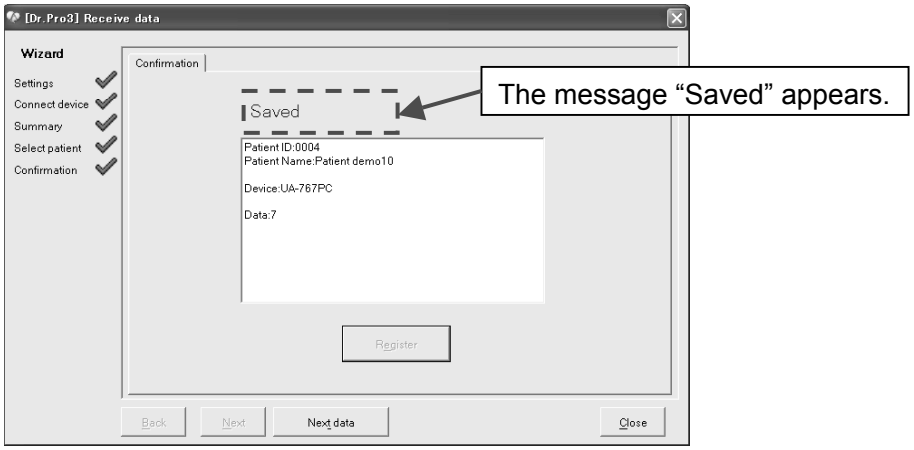
New Patient window



7. Confirm the patient to be registered and click [Register].



8. The message “Saved” appears and data registration has been completed.



To continue receiving data, click [Next data].

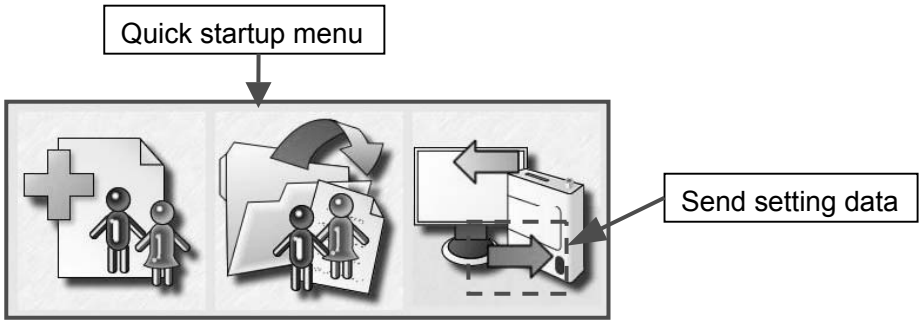
To complete the operation, click [Close].

10. SENDING THE SETTINGS

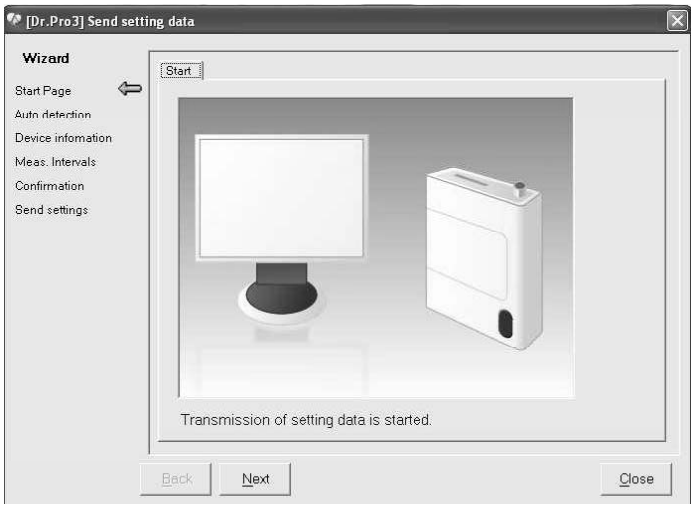
Using Doctor Pro3, the settings of the blood pressure monitor can be changed.

10-1 Automatic Recognition of the Blood Pressure Monitor

1. Click [Send setting data] at the quick startup menu. The Send Setting Data window opens.



2. Click [Next]. The connected blood pressure monitor is automatically recognized.



3. When a connection has been completed, a message appears.

Auto detection of TM-2430 Auto detection of UA-767PC Auto detection of UB-511USB

Confirm that the monitor model is correct.

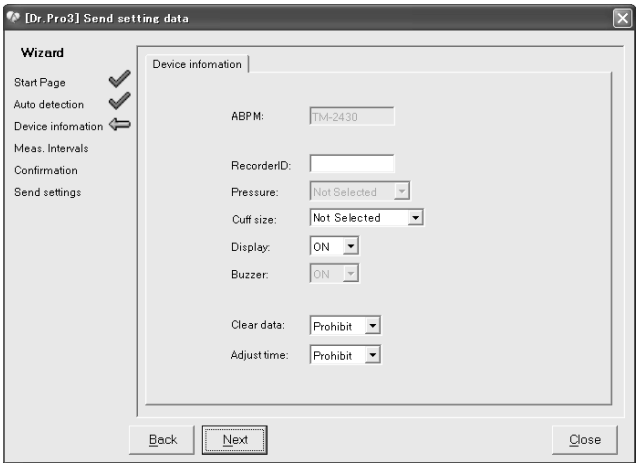
Click [Next].

10-2 Device Information and Measurement Intervals

NOTE
Three modes available in the Measurement Intervals window are as follows: Mode 1: 07:00-21:59 The measurement is performed every 15 minutes. 22:00-06:59 The measurement is performed every 30 minutes. Mode 2: The AUTO ON/OFF key is pressed at wake time and bedtime so that the measurement intervals are changed and the time during sleep can be distinguished on the data. When the Sleep button is off, the measurement is performed every 15 minutes. When the Sleep button is displayed, the measurement is performed every 30 minutes. Mode 3: The measurement intervals can be set within a maximum of 24 hours. Select from different measurement patterns.

◆TM-2430

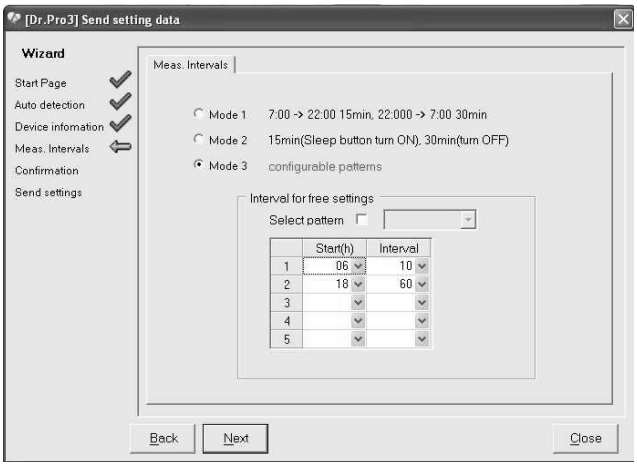
Device Information window



1. Enter Recorder ID.
2. Select the items below from the pulldown menu.
   - Cuff size
   - Display
   - Clear data
   - Adjust time

Click [Next].

Measurement Intervals window



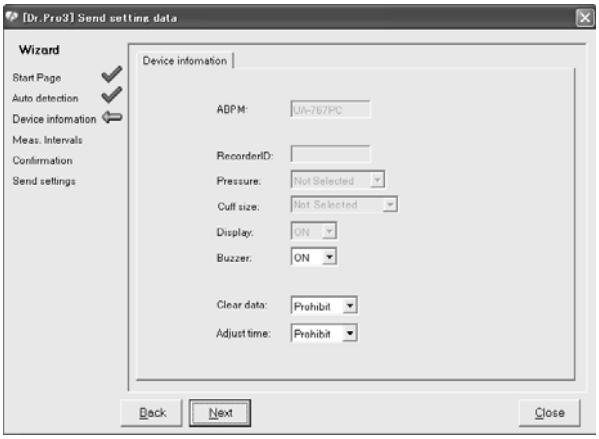
Select a mode from Modes 1-3.

When Mode 3 is selected, set Interval for free settings. Select a starting time in hours and the interval from the pulldown menu. Select “OFF” for the interval when no partial analysis is performed. When a measurement pattern, which is set in “Measurement pattern settings,” is to be used, click the Select Pattern box and select a pattern from the pulldown menu.

Click [Next].

◆UA-767PC

Device Information window

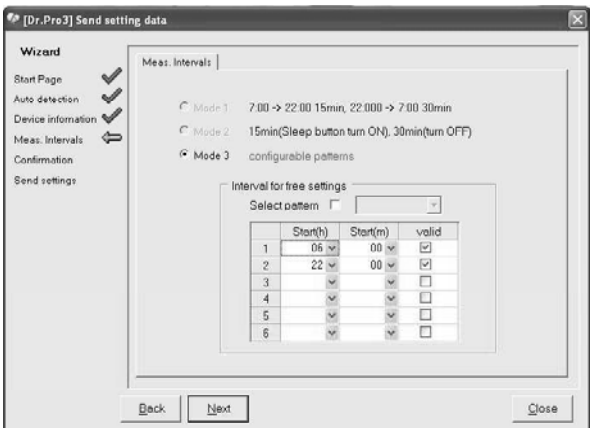


Select the items below from the pulldown menu.

- Buzzer
- Clear data
- Adjust time

Click [Next].

Measurement Intervals window

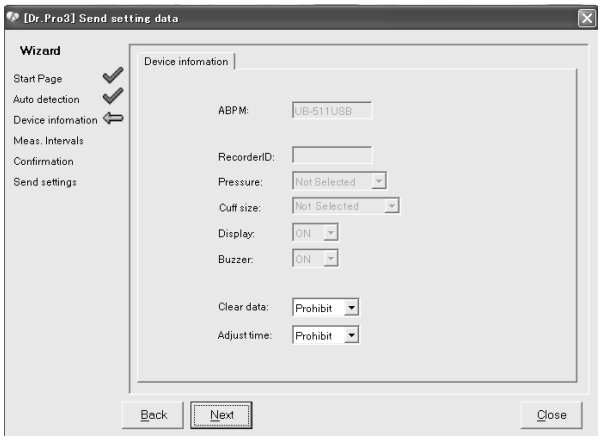


Set Interval for free settings. Select a starting time in hours and the starting time in minutes from the pulldown menu and click the Valid box to use. When a measurement pattern, which is set in “Measurement pattern settings,” is to be used, click the Select Pattern box and select a pattern from the pulldown menu.

Click [Next].

◆UB-511USB

Device Information window



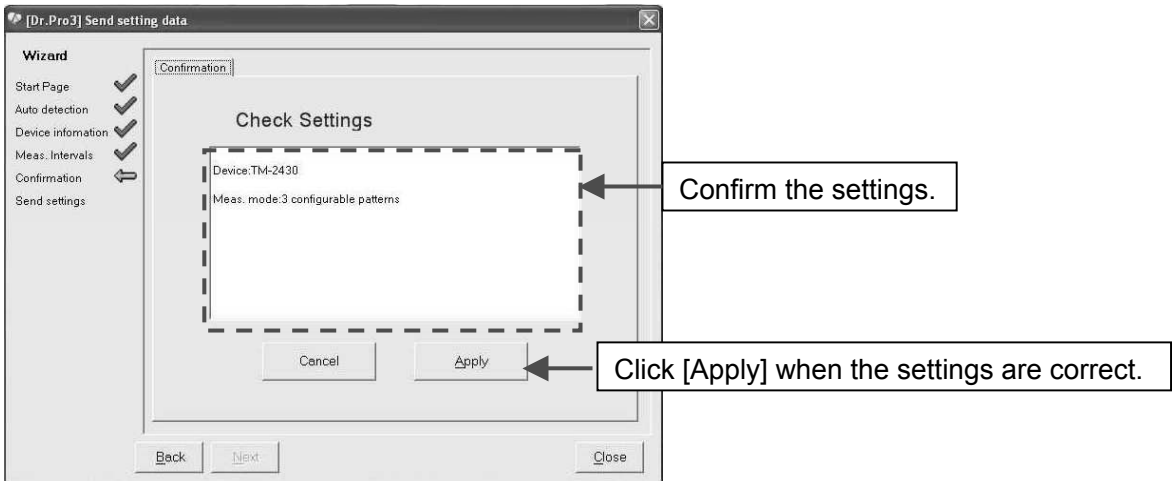
Select the items below from the pulldown menu.

- Clear data
- Adjust time

Click [Next].

10-3 Confirming the Settings and Data Transmission

1. Confirm the settings and click [Apply].

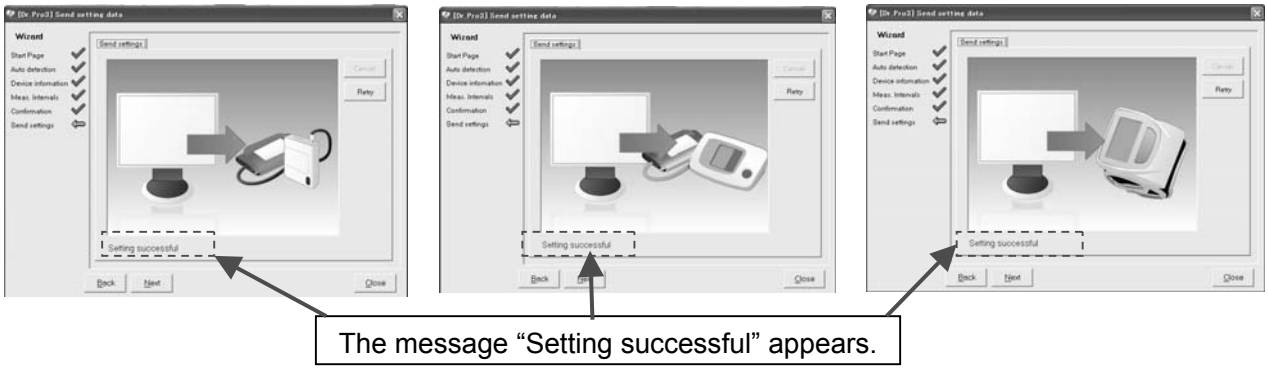


Click [Next].

2. Data transmission has started.

A message appears when the transmission has been completed.

Sent to TM-2430 Sent to UA-767PC Sent to UB-511USB



To continue sending data, click [Next].

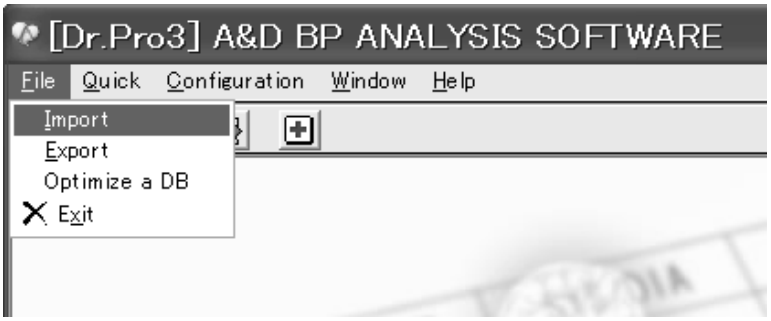
To complete the operation, click [Close].

11. FILE MENU

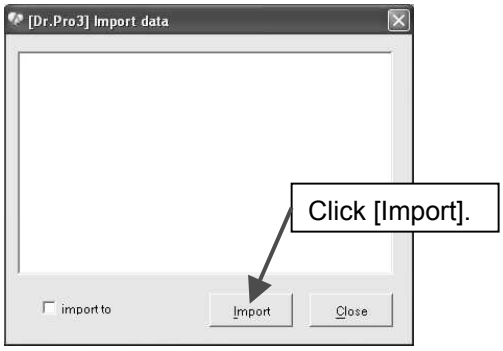
Importing files and exporting files are available in the file menu of the Main window.
Data of the DrPro2/3 CSV Exports Files and DrPro2 DAT Exports Files can be used.

11-1 Importing Files

1. Click “Import” from the File menu of the Main window.

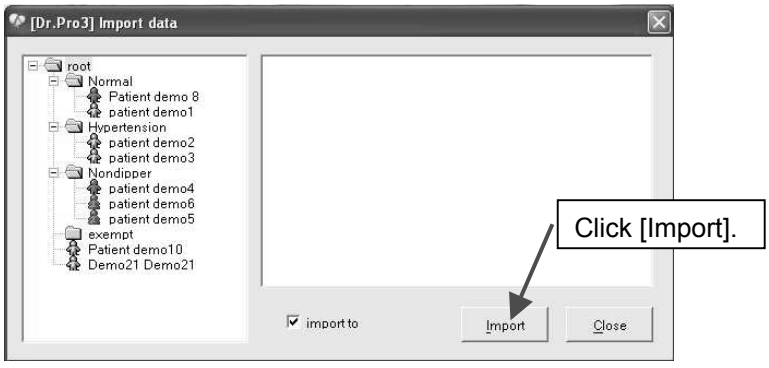


2. Click [Import].

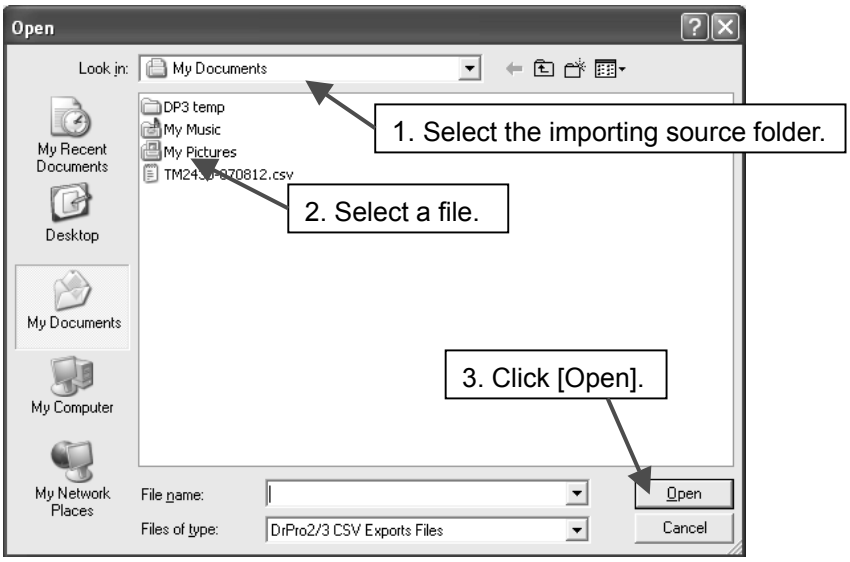


Click the Import to box to specify the importing destination folder.

3. Specify the importing destination folder and click [Import].

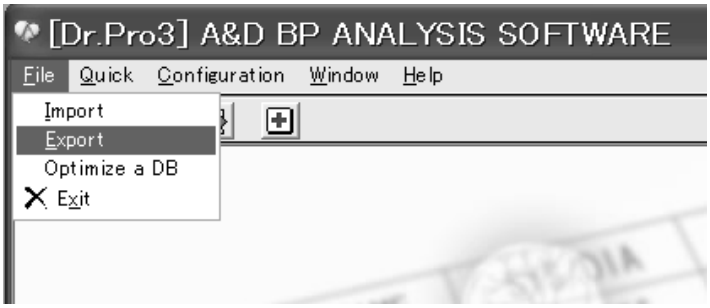


4. Select the importing source folder. Select a file and click [Open]. The file has been imported to the specified folder.



11-2 Exporting Files

1. Click “Export” from the File menu of the Main window.



2. Search the data to export.

   Enter folders, Patient ID, patient name and date to search, and click [Search].

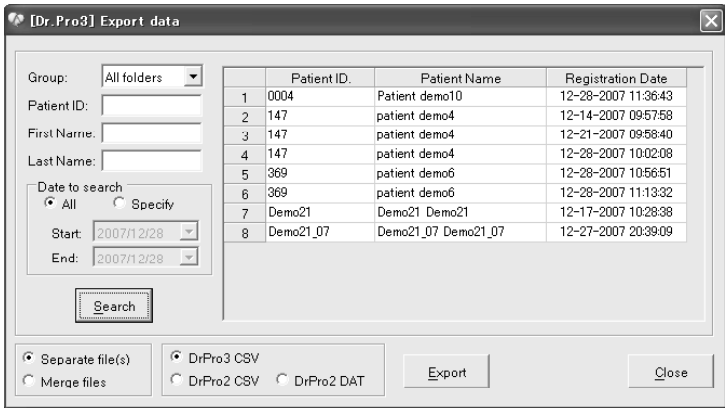
3. Select data to export from the list displayed.

4. Select the items below.

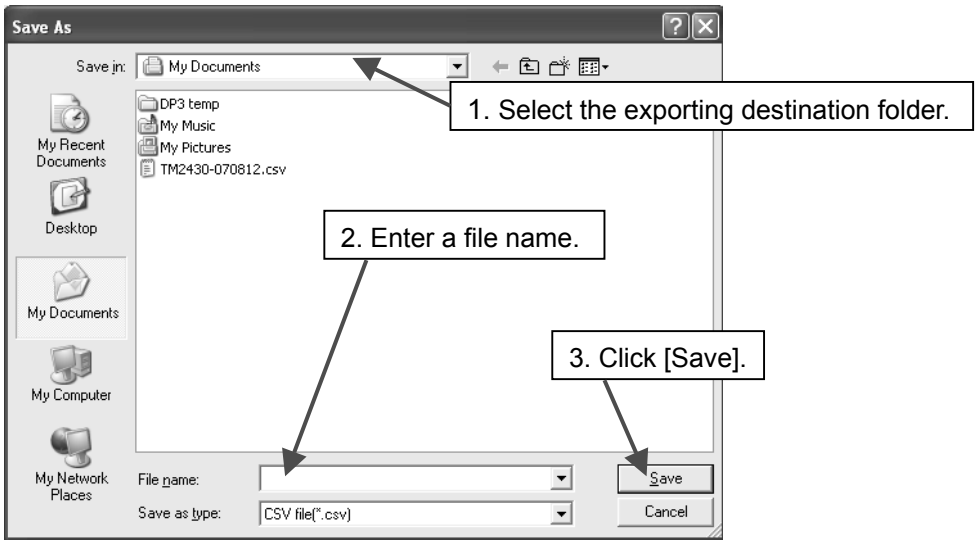
   • Number of files to output : Separate file(s), Merge files

   • File type : DrPro3 CSV, DrPro2 CSV, DrPro2 DAT

5. Click [Export].

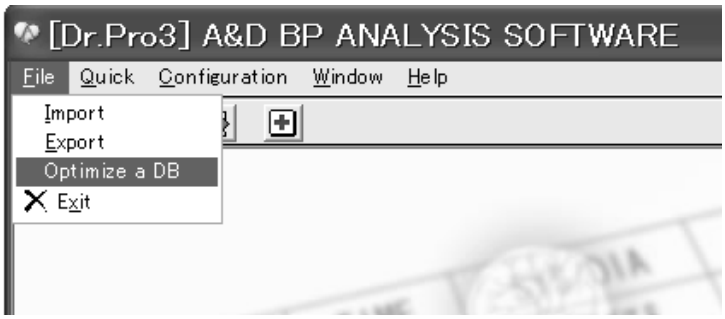


6. Select the exporting destination folder and enter a file name. Click [Save]. The file has been exported.

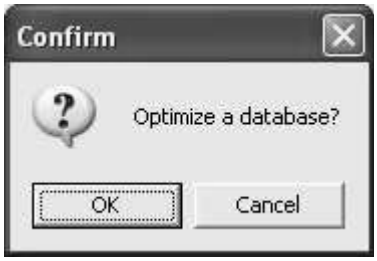


11-3 Optimizing a Database

1. Click “Optimize a DB” from the File menu of the Main window.



2. The Confirm window opens.



Click [OK] to optimize the database.

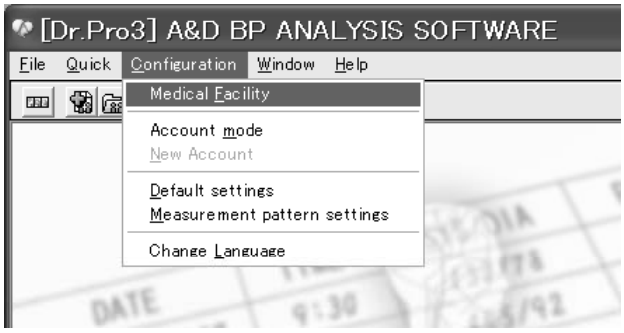
12. CONFIGURATION

The Configuration menu has the following sub menus.

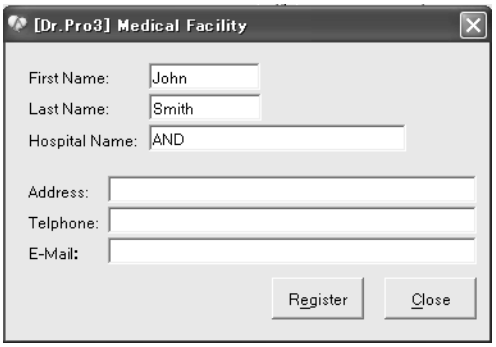
- Medical Facility
- Account Mode
- New Account
- Default Settings
- Measurement Pattern Settings
- Change Language

12-1 Medical Facility

1. Click “Medical Facility” from the Configuration menu of the Main window.



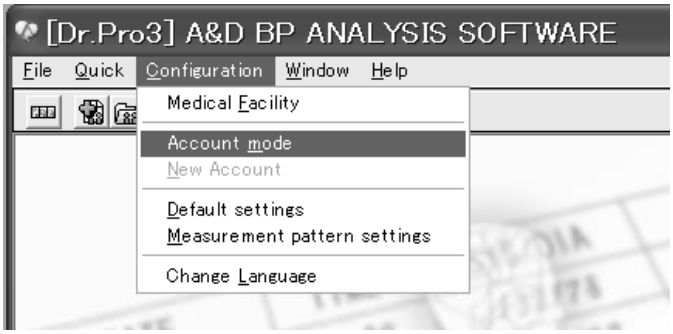
2. Enter each item and click [Register]. The Confirm window opens. Click [OK] to register the medical facility.



Item	Description
First name	Enter the first name using a maximum of 30 characters.
Last name	Enter the last name using a maximum of 30 characters.
Hospital name	Enter the hospital name using a maximum of 50 characters.
Address	Enter the hospital address using a maximum of 50 characters.
Telephone	Enter the hospital telephone number using a maximum of 20 characters between 0 to 9 and a hyphen (-).
E-mail	Enter the hospital e-mail address using a maximum of 50 characters.

12-2 Account Mode

1. Click “Account Mode” from the Configuration menu of the Main window.

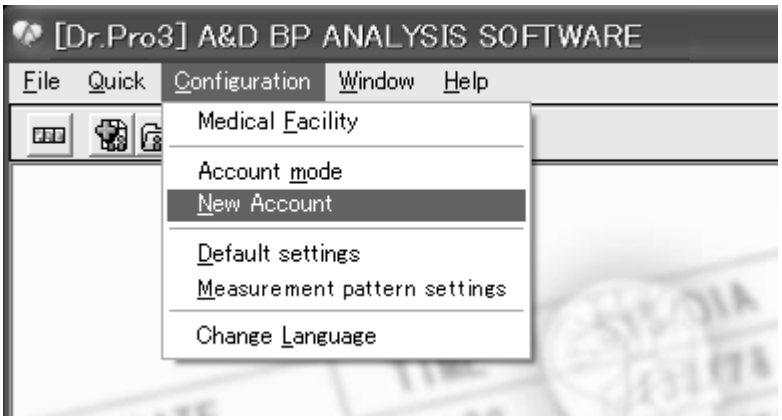


2. Select either single account or multi account and click [Register].

The Confirm window opens. Click [OK] to change the account mode.

12-3 New Account

1. Click “New Account” from the Configuration menu of the Main window.



2. Enter account names and passwords for multi accounts. Select authority.

Click [New], [save] or [Delete] to add, update or delete the account.

When [Close] is clicked, new account registration has been completed.

NOTE

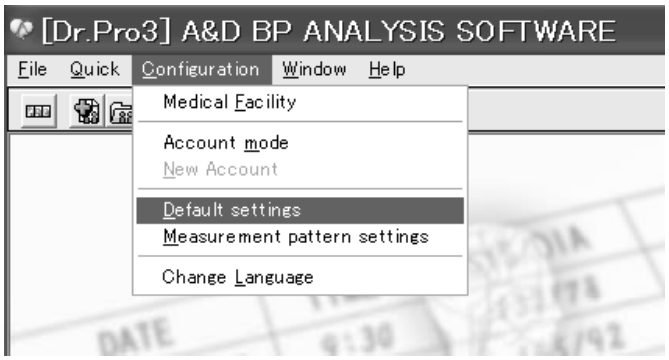
When logged in, into the single account mode right after installation, if the user changes to the multi account mode and restarts, logging in will no longer be available because the account and password have not been registered.

If the condition above occurs, enter the items below to log in.

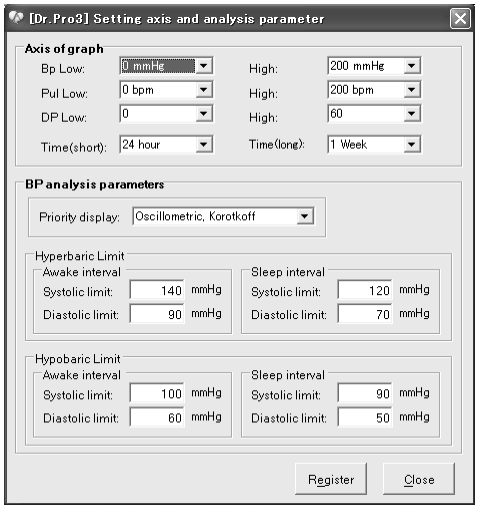
Account : Administrator, Password : sys

12-4 Default Settings

1. Click “Default Settings” from the Configuration menu of the Main window.



2. Enter each item and click [Register]. The Confirm window opens. Click [OK] to register the default settings.



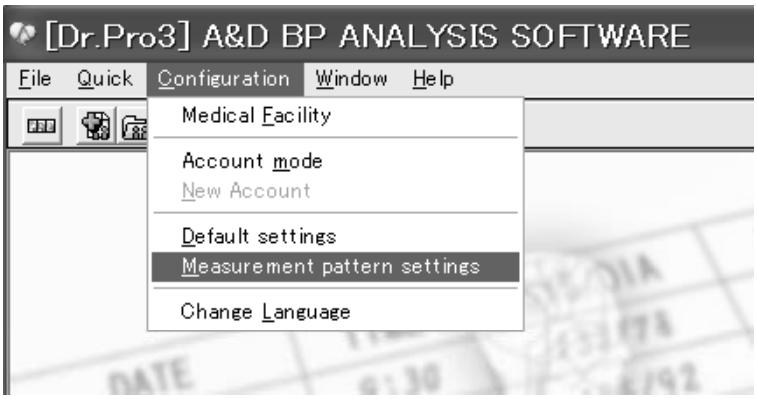
Item	Description
BP Low	Select the lowest value for the BP axis from the pulldown menu.
BP High	Select the highest value for the BP axis from the pulldown menu.
Pul Low	Select the lowest value for the pulse axis from the pulldown menu.
Pul High	Select the highest value for the pulse axis from the pulldown menu.
DP Low	Select the lowest value for the DP axis from the pulldown menu.
DP High	Select the highest value for the DP axis from the pulldown menu.
Time (short)	Select the value for the time axis from the pulldown menu. (For TM-2430)
Time (long)	Select the value for the time axis from the pulldown menu. (For UA-767PC and UB-511USB)
Priority display	Select from the pulldown menu.
Hyperbaric limit for systolic in awake section	Enter the value.
Hyperbaric limit for diastolic in awake section	Enter the value
Hyperbaric limit for systolic in sleep section	Enter the value
Hyperbaric limit for diastolic in sleep section	Enter the value
Hypobaric limit for systolic in awake section	Enter the value
Hypobaric limit for diastolic in awake section	Enter the value
Hypobaric limit for systolic in sleep section	Enter the value
Hypobaric limit for diastolic in sleep section	Enter the value

- Hyperbaric limit:
  - The percentage of readings exceeding the specified Systolic and Diastolic limits for the Awake and Sleep sections will be calculated and noted both in the summary data and printed reports.
  - The values are used as “limits” for HBI analysis.

- Hypobaric limit:
  - The percentage of readings not reaching the specified Systolic and Diastolic limits for the Awake and Sleep sections will be calculated and noted both in the summary data and printed reports.
  - The values are used as “limits” for HBI analysis.

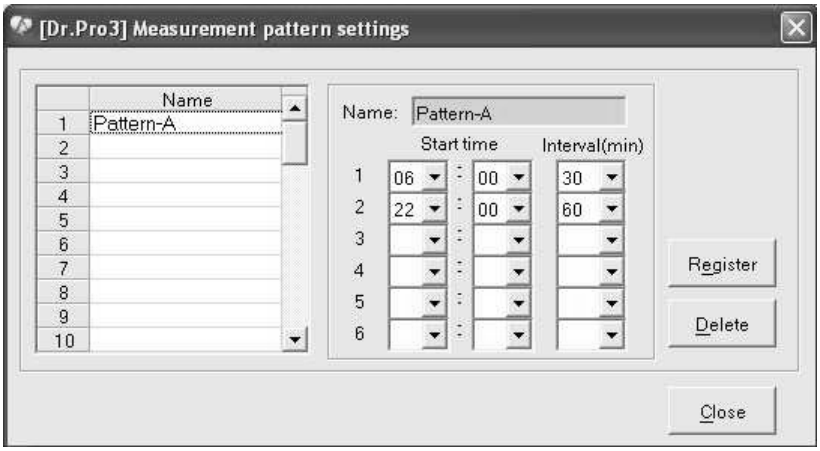
12-5 Measurement Pattern Settings

1. Click “Measurement Pattern Settings” from the Configuration menu of the Main window.



2. Set measurement patterns for Mode 3. Enter each item and click [Register]. The Confirm window opens. Click [OK] to set the measurement pattern.

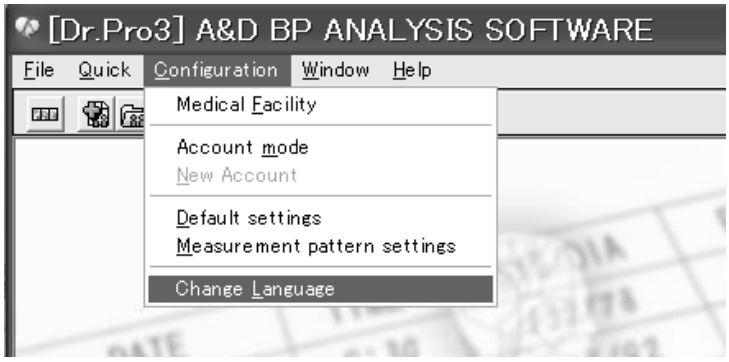
   To delete a setting, click [Delete], and click [OK] for the message “Delete?”.



Item	Description
Name	Name the measurement pattern.
Start time Hour	Select a measurement starting time in hours from the pulldown menu.
Start time Minute	Select a measurement starting time in minutes from the pulldown menu.
Interval (min.)	Select an interval from the pulldown menu.

12-6 Changing Languages

1. Click “Change Language” from the Configuration menu of the Main window.



2. In the Change Language window, select the language to be used and click [OK]. Changing languages has been completed.

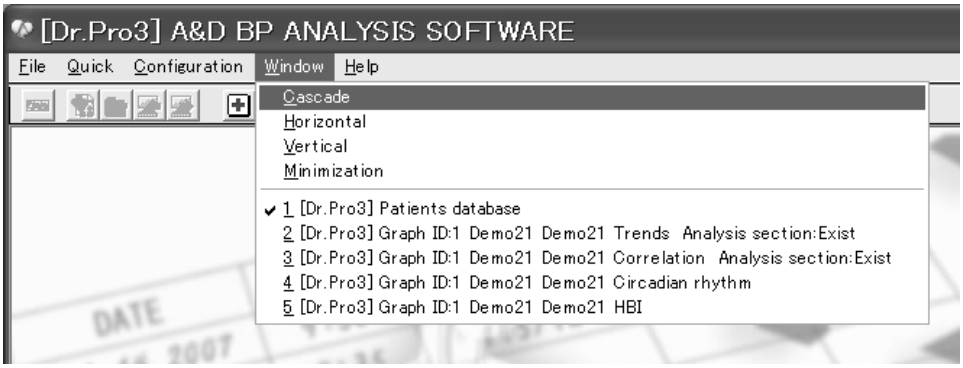
13. WINDOW MENU

The Window menu has the following sub menus.

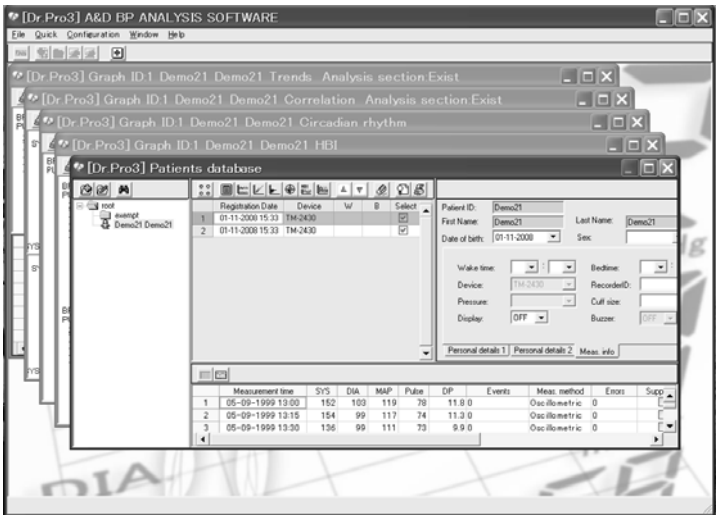
- Cascade
- Horizontal
- Vertical
- Minimization

13-1 Cascade

1. Click “Cascade” from the Window menu of the Main window.

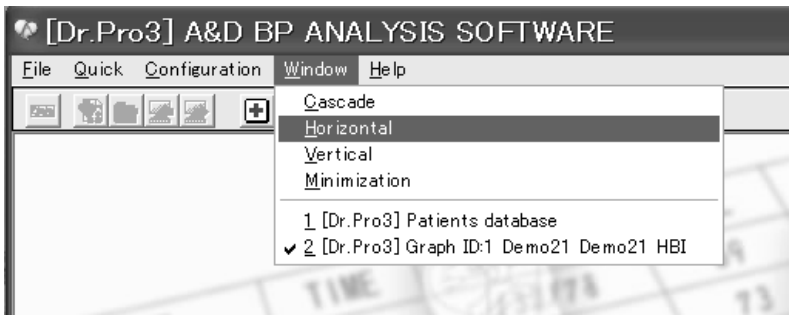


The opened windows will be cascaded.

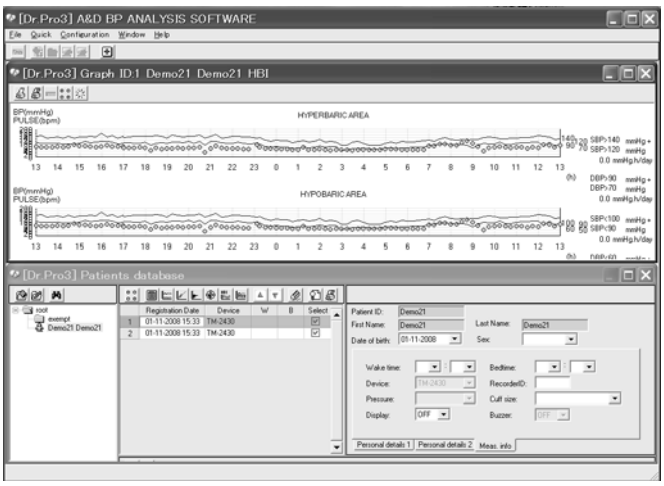


13-2 Horizontal

1. Click “Horizontal” from the Window menu of the Main window.



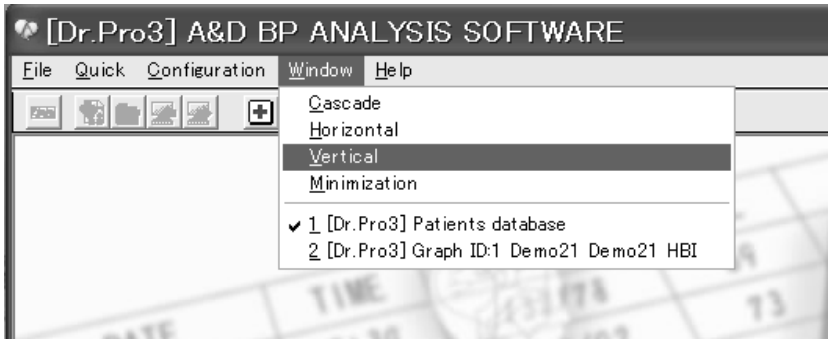
The opened windows will be arranged horizontally.



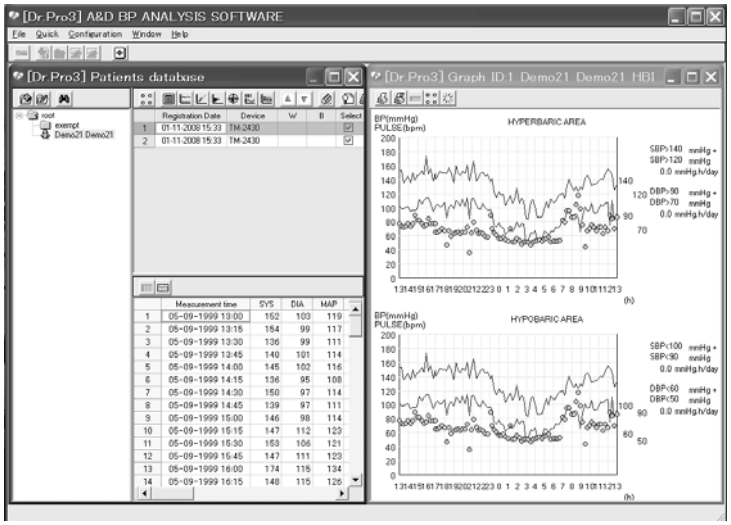
***Note**: When more than three windows are opened, the “Horizontal” and “Vertical” functions arrange the opened windows in the same way.*

13-3 Vertical

1. Click “Vertical” from the Window menu of the Main window.



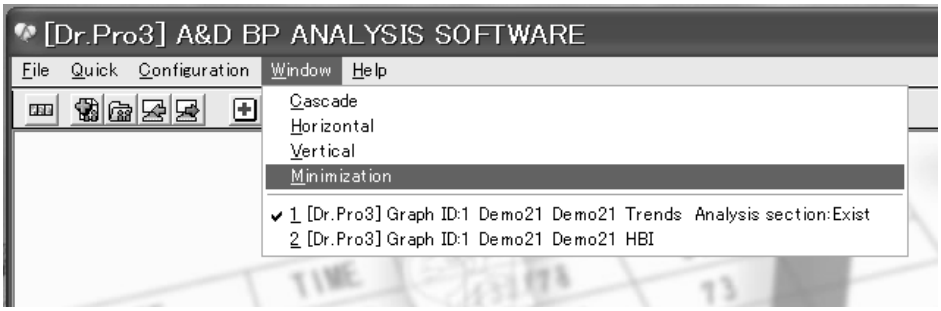
The opened windows will be arranged vertically.



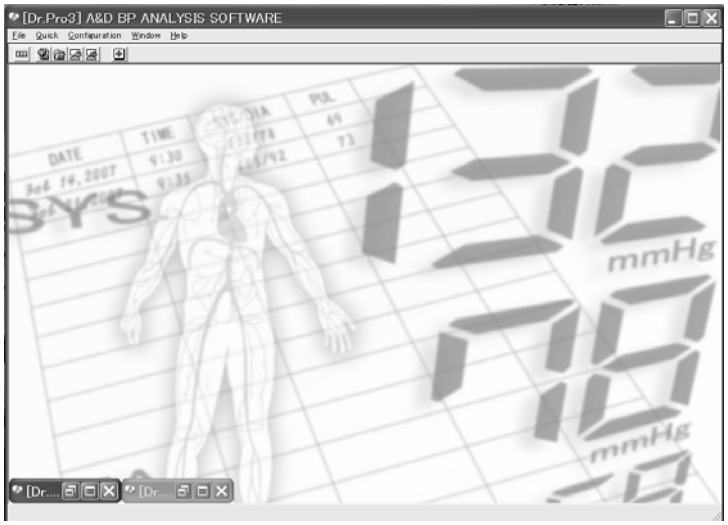
***Note**: When more than three windows are opened, the “Horizontal” and “Vertical functions arrange the opened windows in the same way.*

13-4 Minimization

1. Click “Minimization” from the Window menu of the Main window.



An opened window will be reduced to an icon.



To restore the window to the original size, double-click on the reduced icon. Or click the icon and select “Restore to the original size” or “Maximize.”

14. MAINTENANCE

14-1 Error Codes

14-1-1 TM-2430

The table below lists the errors that may occur during a monitoring session and offer information on probable causes and corrections.

Measurement errors may be shown on the list of measurement data or the blood pressure monitor.

Error code	Probable cause	Correction
E00	Clock parameters have not been set.	Enter the clock parameters.
E03	The cuff does not inflate.	Exhaust the air from the cuff completely.
E04	Measurement is stopped due to a low battery.	Replace the batteries with new ones. Restart the Auto mode if you use it.
E05	Inflation pressure does not reach the target pressure.	Rewrap the cuff and reconnect it to the blood pressure monitor. If the error persists, there may be an air leak and repair is necessary.
E06	Pressurization is greater than 320 mmHg.	Do not move and try to relax during the measurement. If the error persists, repair is necessary.
E07	Forced stop using STOP key	Do not press the STOP key unless necessary.
E08、E10	Pulse can not be detected.	Do not move and try to relax during the measurement.
E20	Pulse is less than 35 beats or more than 200 beats per minute.	Measure the blood pressure by other methods.
E21	Diastolic is greater than 160 mmHg or less than 40 mmHg.	Measure the blood pressure by other methods.
E22	Systolic is greater than 280 mmHg or less than 60 mmHg.	Measure the blood pressure by other methods.
E23	The difference between systolic and diastolic is greater than 150 mmHg or less than 10 mmHg.	Measure the blood pressure by other methods.
E30、E31	Air leaks in the cuff assembly.	Repair is necessary.
E32	Clock error	If the error persists, repair is necessary.
E50	Pressure offset error	Repair is necessary.
E52	Memory error	Repair is necessary.
E53	Defective battery contact	Replace batteries correctly. If the error persists, repair is necessary.

Error code	Probable cause	Correction
E55、E56、E57	Exhaust error	Relax and do not move during the measurement. If this error occurs frequently, repair is necessary.
E60	Interval setting error	Enter the interval parameters correctly.
E70、E71、E72、E73	RS-232C error	Reconnect the communication cable. If the error persists, repair is necessary.
E74	Voltage decreases during communication.	Replace the batteries with new ones and restart communication.
E75	Protocol error due to external equipment	Reconnect the communication cable. If the error persists, repair is necessary.

14-1-2 Guidance messages

The table below lists the guidance messages that may appear in the Receive Data/Send Setting Data windows.

• Messages when data is received:

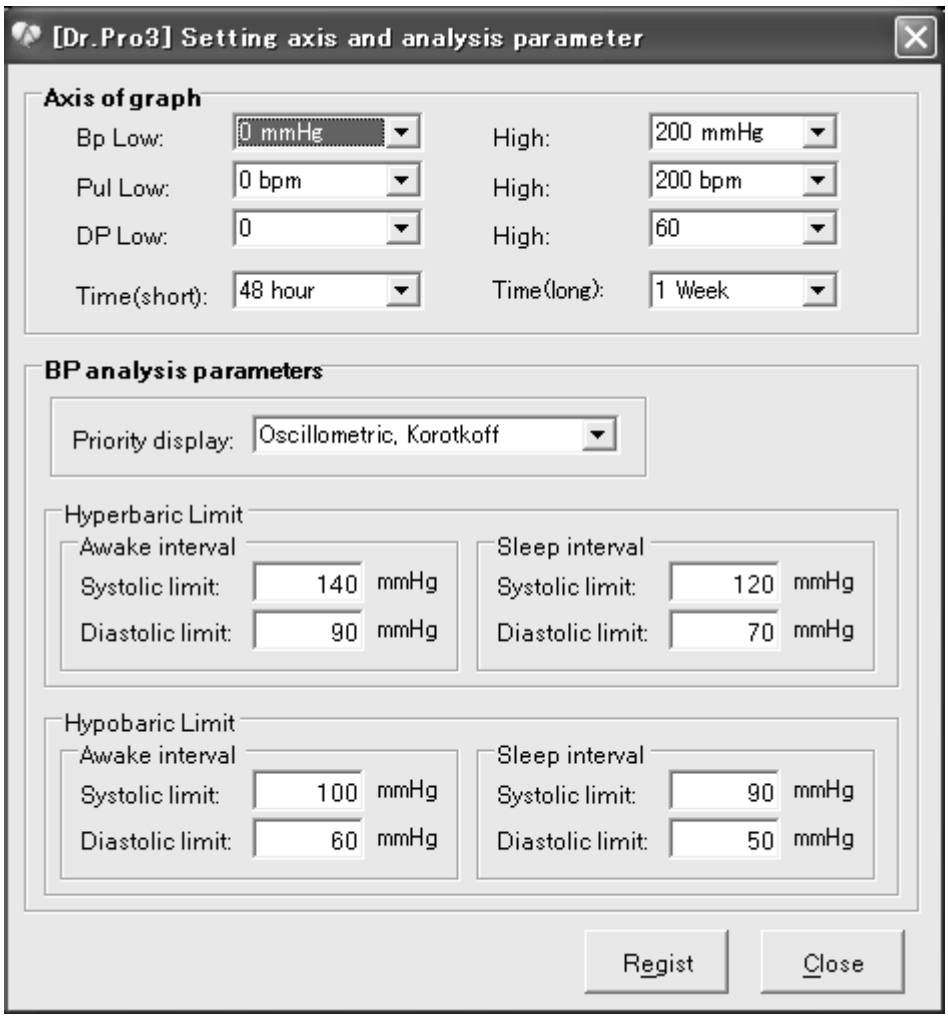
Message	Correction
Failed to initialize RS233C port	• Confirm that the communication cable is connected to the blood pressure monitor. • Confirm that the USB driver is functioning correctly. • Disconnect all the cables. Restart Doctor Pro3.
Automatic recognition of ABPM failed.	
Failed to receive data	
Failed to read measurement settings	
Failed to read measurement data	
Failed to erase measurement data	
Failed to setup the clock	

• Messages when data is sent:

Message	Correction
Failed to initialize RS233C port	• Confirm that the communication cable is connected to the blood pressure monitor. • Confirm that the USB driver is functioning correctly. • Disconnect all the cables. Restart Doctor Pro3.
Automatic recognition of ABPM failed.	
Failed to send data	
Failed to erase measurement data	
Failed to erase measurement settings	
Failed to set measurement parameters.	
Failed to setup the clock	
The device connected differs from the one at the time of automatic recognition.	• Use the blood pressure monitor that was automatically recognized. • Click [Cancel] or restart Doctor Pro3.

14-2 Default Settings

The window below shows the default settings that have been set before shipment.



14-3 Disposing of the Used Product

When disposing of or recycling this product, follow your local regulations to protect the environment.

15. CUSTOMER SUPPORT

15-1 Inquiries about the Product

Contact the local A&D dealer you purchased the product from.

15-2 Disclaimer

A&D Company Limited makes no warranty of any kind with regard to, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. A&D believes the technical information contained in this document is accurate, however, in no event will A&D be liable for errors contained herein. A&D is not responsible for any direct, indirect, special, incidental or consequential damages or losses which occur in connection with the furnishing, performance, or use of this product.

Further, A&D Company Limited does not accept liability in any of the following circumstances:

Damage caused by maintenance or repair by an unauthorized dealer.
Damage caused by not obeying the precautions described in the instruction manual.
Damage caused by not using the measurement conditions described in the instruction manual.
Replacement of the accessories or consumables.
Damage caused by using products other than those supplied by A&D.
Damage caused by modifying or disassembling the product.
Damage caused by the user's mishandling.
Damage caused by a natural disaster such as fire, earthquake, flood or a lightning strike.

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